

IN 10 VOLUMES

ENCYCLOPAEDIA OF
**WORLD
& PEOPLE**



HAROLD SHELTON G K BUCKNALL

**ENCYCLOPAEDIA OF
WORLD AND PEOPLE**

ENCYCLOPAEDIA OF WORLD AND PEOPLE

(In 10 Volumes)

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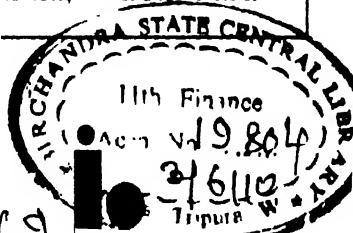
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FOREWORD

A WHOLE era in the history of the British people has passed since John Cabot discovered Newfoundland in 1497. From the modest beginnings of a few colonies the British Empire grew until it was territorially the most magnificent and economically the most wealthy of all the empires the world has ever known. With the lapse of time many of the colonies, peopled for the most part by settlers from Britain, developed a separate personality and with it the will to have a separate existence. So, out of the British Empire, arose the British Commonwealth of Nations, a force no less powerful and no less united than the less individual empire from which it sprang.

Many are the great names which made the growth of this Empire possible, John Cabot, Raleigh, William Penn, Cook, Clive, and Wolfe. These and others are honoured in the memories of British people. But the British Commonwealth of Nations did not evolve without sorrow and suffering; yet in retrospect, the colonial conflicts with France and Holland, the revolt of the American colonists, and the troubled days of the South African war, are seen to have been necessary to its growth.

The year 1907 marks the beginning of a new conception of Empire; for it was then that the self-governing Colonies took the title of Dominions. What was more important still, it was then agreed for the first time that at all future Imperial Conferences the meetings should be recognized as meetings of Governments. Since then many steps have been taken to define the status of the self-governing Dominions, culminating in the Statute of Westminster, which finally acknowledged the complete independence of the Dominions and so eliminated the problems which had troubled relations between the various elements of the Commonwealth and the Mother Country, and has, it is hoped, laid a surer foundation for permanent friendship and co-operation.

It is perhaps not too much to say that the principles of good-will and co-operation are the most vital principles which bind together Great Britain, the Dominions, and India. These are principles which, of necessity, will prove stronger than any ties of force or compulsion. The British Commonwealth of Nations stands to-day as the most potent force for peace in the world, and the most hopeful means of prosperity for the great nations which compose it.

The strength of the ties of sentiment which characterize the relations of the Dominions with the Mother Country and the Mother Country with the Dominions, and the intense loyalty of all to the Crown, were amply demonstrated in the period of conflict of 1914-18. It is our solemn hope that no similar conflict will occur again, but if it does there will be no break-up of the Empire. The world may be assured that recent years have seen a strengthening of these ties and, if possible, a deepening of the loyalty and affection of all for the Crown.

If only because of the importance (an importance which cannot be exaggerated) of the maintenance and strengthening of these relationships, it is appropriate that citizens of Great Britain and Northern Ireland should have an adequate knowledge of the resources, potential and actual, of the countries known to

them as Dominions, and of India. It is equally appropriate that the citizens of these Dominions should have an equally intimate knowledge of the conditions and resources of the Mother Country. It is hoped that the Dominions and India Volume of *THE WORLD BOOK* will help to bridge the gap in understanding which, owing to distance, lack of knowledge, and, in some cases, differing traditions, exists between them. The Editors are, accordingly, proud to present a fuller treatment of the Dominions and India than would have been possible in the usual Encyclopaedia.

The arrangement of this volume is comparatively simple. It is divided into six separate sections concerned respectively with Australia, Canada, the Irish Free State, New Zealand, the Union of South Africa, and India. Each of these sections is a self-contained unit within which the subjects are arranged alphabetically, with numerous cross references to other volumes of the work. Consequently, if a reader required information relating to a particular phase of one of the Dominion's activities he will be able to find it without difficulty, whether it is contained in the ninth volume or in part of the alphabetized portion of the first eight volumes. Moreover, the Dominions and India Volume is an integral part of the whole work and has been indexed as such in the Guide Volume. It is not a separate publication, nor yet a supplementary volume, but is an essential part of the scheme laid down in planning *THE WORLD BOOK*.

The main subjects which have been treated in connexion with each Dominion and in connexion with India, are (apart from the introductory section, which is devoted to the rise of the British Empire, the history of its trade, and the development of India), Agriculture, Animal Life, Archaeology, Art, Banking and Finance, Climate, Communications, Geology, Industries and Manufactures, Language, Law, Literature, Natural Resources, Physical Features, Plant Life, Political and Social Organization, Religion, Sports and Pastimes, and Trade, but there are a multitude of other subjects which are necessarily treated in less detail. Where the reasons seemed sufficient alternative topics have been substituted for those enumerated above, according to the relative importance which they hold in the country concerned. Moreover, where it was convenient, two or more of these topics have been merged into a single article or otherwise re-arranged.

The Editors present the Dominions Volume with every confidence that the wealth of talent and experience which has been drawn upon in obtaining the contributions will guarantee it a sympathetic reception. The knowledge that every article is guaranteed by the name of some authority whose position and attainments must command the respect of every reader is strictly in accordance with the policy pursued unswervingly in the production of *THE WORLD BOOK*.

THE WORLD BOOK

INTRODUCTION

THE STORY OF THE EMPIRE

THE British Empire, to-day, is the largest the world has ever known. Within its varying political and social systems is more than one-quarter of the world's estimated population, and under its rule is more than a quarter of the surface of the globe.

A British, or rather an English, empire existed long before the reign of Elizabeth. During the Middle Ages the kings of England were constantly striving, with varying success, to bring under their dominion large territories in France. These wars of conquest were not for the purpose of establishing colonies, for at that time it is probable that England was less densely populated than France; they were partly for prestige and partly for the riches which could be gained from loot and the ransom of captives. It is an historical fact that for a century after the death of Mary, national pride was more easily moved at the thought of new Continental gains than at the actual acquisition of vast territories in the newly discovered lands to the West. This habit of mind of the English people is well illustrated by the storm of protest roused by Charles's sale of Dunkirk and by the withdrawal from Tangier.

The first of the great explorers to be commissioned from England was John Cabot, a Venetian, who received from Henry VII in 1496 a commission to find a sea route to the East, and to establish trading connexions with any Eastern lands hitherto undiscovered. It was true to the policy of this able king, who sought always to strengthen the trading interests of England. Cabot was unsuccessful in discovering a new route to the East, but in 1497 he did discover Newfoundland, which he took to be a part of Asia. So Newfoundland became Britain's oldest possession in the West.

The most spectacular expeditions during the reign of Elizabeth cannot seriously be regarded other than as freebooting ventures. The famous navigators, Drake and Hawkins, though they sometimes engaged in legitimate trade, for the most part sought the quick wealth which could be gained from the capture of the Spanish treasure ships or the pillage of the new cities on the Spanish Main. Indeed, they hindered rather than helped the establishment of an overseas empire, for when Raleigh and Humphrey Gilbert attempted to found colonies in Virginia and Newfoundland respectively, they were unsuccessful, for their expeditions had attracted adventurers rather than farmers. At the close of the same reign began a purely commercial venture, the founding of the East India Company, which later culminated in the acquisition of the Indian Empire.

It is a curious commentary on British institution and a possible explanation of the independence of the American colonists that many of the British Colonies were established by exiles from the Motherland, though Virginia was founded with Royal sanction in 1607.

The Pilgrim Fathers, to the number of about 100, sailed from Plymouth for the New World in September, 1620, and made their homes in New England. In 1629 a Royal Charter was given to the company of Massachusetts Bay, and by 1643 "The United Colonies of New England" were formed, consisting of Massachusetts, Plymouth, Connecticut, and New Haven.

In the meantime, British merchants who had been searching for trade had established posts in West Africa, in the Gambia, and Gold Coast areas.

English colonization proceeded at an extraordinary rate on the American mainland; Maryland was established by the Roman Catholics, the Carolinas came into existence, and Pennsylvania was founded by William Penn. The Bahama Islands became a British colony in 1670. Hudson Bay territories were claimed, and by the end of the century Spain, Portugal, and the Dutch were no longer serious challengers. In these activities Scotland, except for the ill-fated Darien scheme, had played little part, but she was to take her place side by side with England when in May, 1707, England and Scotland were united into one kingdom with one Parliament.

The opening up of the lands to the West had radically altered Britain's position in relation to the world. Hitherto she had been on the edge of the world, far from the centres of trade. As a wool-growing country her purpose was to supply the raw materials which were manufactured in the more industrialized areas on the Continent. She now found herself in the centre of the world, the natural market for the exchange of raw materials for manufactured goods.

COLONIAL CONFLICTS WITH FRANCE

Great Britain had thirteen colonies on the North American mainland, stretching along the coast line from Massachusetts to Georgia, and in the north-east of this chain of colonies lay the province of Nova Scotia ceded to Great Britain by the Treaty of Utrecht in 1713. The gains brought by this Treaty were considerable, for it confirmed British possession of Gibraltar (Britain's first fortress colony), made St. Kitts wholly British, and eliminated the French from the lands and waters of Hudson Bay.

In spite of this, the French were well established in Northern America, having formed settlements at Quebec, Montreal, and generally in the vicinity of the Great Lakes, the Ohio and the Mississippi. There was no definite boundary between the French and British settlements, and fighting was almost continuous.

French power in North America was completely broken by Wolfe and Amherst. When in 1763 the Peace of Paris brought an end to the Seven Years War, the net gains to Britain were, in North America, the whole of Canada and Louisiana east of the Mississippi, in the West Indies, St. Vincent and Tobago; in West Africa, the whole of Senegambia; and in India, only under strict limitations, was France able to maintain a foothold.

By the middle of the century, Great Britain owned all the Hudson Bay regions, Newfoundland, and the long line of the thirteen colonies from Maine, then a part of Massachusetts, to Georgia. Further south again, in the tropical Caribbean Sea, the British West India islands formed another sphere of British overseas enterprise. The West Coast of Africa had sunk in importance, but St. Helena was a distant outpost of India, which was then growing in importance as a trading outlet.

REVOLT OF THE THIRTEEN COLONIES

The cost of the wars with France had added many serious liabilities to the British Exchequer and the demand was made upon the American colonists that they should contribute to the cost of their own defence bill. The colonists declined to be taxed without their consent. The disagreement that followed was badly handled. The colonists raised the cry of "No taxation without representation," and on 4th July, 1776, the Colonies made their Declaration of Independence. This act meant war, and the colonists showed their ability in the field when they compelled General Burgoyne's forces to surrender at Saratoga in 1777. This disaster to the British encouraged their old enemy France to take up arms against them once more, and soon Spain and Holland were also involved in a general anti-British conflict. The end came when at Yorktown in 1781, the British fleet failed to put in an appearance, and Lord Cornwallis, who was relying on them, was compelled to surrender to the colonists with the whole of his forces. Eventually the Peace of Versailles was signed on 3rd September, 1783, and by this, Great Britain recognized the thirteen old North American colonies as "Free and Independent States." Britain also parted with Florida and Minorca to Spain and with the West Indian island of Tobago to France. The French also regained all their former possessions in Senegambia. Thus ended what is known as the "Old Empire."

However serious the losses, they had at least one good effect. They forced British politicians to reconsider their attitude to the colonial possessions. Hitherto they had been regarded as sources of wealth which might be exploited for the benefit of Britain. They were administered in much the same way as the landowners managed their great estates. The colonies were the property of England and she alone had a right to determine their government, etc. It might be said that in losing North America, Britain retained Canada, Australia, and New Zealand, which would inevitably have seceded if she had adopted the same rigid policy towards them.

BUILDING THE NEW EMPIRE

Captain James Cook had claimed British ownership of the eastern coast of Australia in 1770, and when no longer able to send convicts to the American colonies, Britain revived a plan for colonizing New South Wales, as Cook had named the Australian territory, with



AUSTRALIA

The smallest of the continents, Australia lies entirely within the Southern Hemisphere. It is second in size only to Canada among the States of the British Empire. 1. Sydney; capital of New South Wales and leading seaport, founded in 1788 as a penal settlement. 2. Statue to Captain Cook, discoverer of the "Island Continent," at Whitby, Yorkshire. 3. Smelters at Port Pirie, South Australia. 4. Shipping at Port Adelaide. 5. Surf riding. 6. In National Park, Queensland. 7. The Blue Mountains, part of the mountain system which divides the rivers flowing to the Pacific from those flowing inland and to the Indian Ocean.

Photos: Australian National Travel Association; Agent-General for Queensland; Agent-General for South Australia; Cherry Kearton

convict labour. Accordingly, in 1788, a convict settlement was established at Port Jackson, now Sydney Harbour, and this was the first permanent British foothold in Australia or in the Southern Seas. Norfolk Islands and Tasmania were also appropriated by the British Government. As in 1786 the East India Company had purchased the Island of Penang, at the northern end of the Straits of Malacca, and in 1786 former slaves had been settled in Sierra Leone, on the West Coast of Africa, Britain had, within five years of the loss of her old colonies, started to rebuild her Empire anew. In 1788, too, British merchants, interested in the fur trade, having crossed the Pacific, established a small trading station on Vancouver Island, and here were the beginnings of a British settlement that was to become British Columbia, and to link up with the other settlers in Canada.

At the end of the Napoleonic Wars the British Empire consisted of Canada, islands in the West Indian group, Gibraltar, Sierra Leone, Ascension Island, St. Helena, Cape Colony, Mauritius, a great part of India, New South Wales, and Tasmania. In 1815, too, the British made good their claims to their settlements in Guiana. Britain was now the only great Colonial power, for Holland had lost not only Cape Colony but also Ceylon. The Spanish and Portuguese colonies in South America were in a state of revolt, and France had only a few insignificant possessions.

By 1830, Great Britain had made sure of the whole of Australia for the Empire. In 1836 a South Australian Association named its first settlement in South Australia after Queen Adelaide. Unlike previous settlements on the Australian mainland, this was one of free citizens, and not of convicts.

Even while Britain was concerned with developments in these larger territories she was not neglecting the outposts of Empire. In 1824 she had acquired the island of Singapore, which with Penang and Malacca she was later to create the Straits Settlements. In other regions she was busy and in 1832 established her claim to the Falkland Islands. Aden was occupied in 1839, and Hong Kong in 1841. By the Treaty of Waitangi, made with Maori chiefs in 1840, British sovereignty over New Zealand was assured. Settlements were founded and under the Imperial Act of 1852 responsible Government began in New Zealand soon afterwards. Meanwhile, in Australia, Victoria had been founded as a colony in 1851, and Queensland in 1859. Lower Burma was annexed in 1852, placing the whole coastline of the Bay of Bengal in British hands.

EXPANSION IN AFRICA

When in 1806, Great Britain reconquered Cape Territory, at the southern extremity of the African Continent, grave responsibilities were incurred. The Cape, even then, had a white population of more than 25,000, mainly Dutchmen, who quite naturally resented the intrusion of the British.

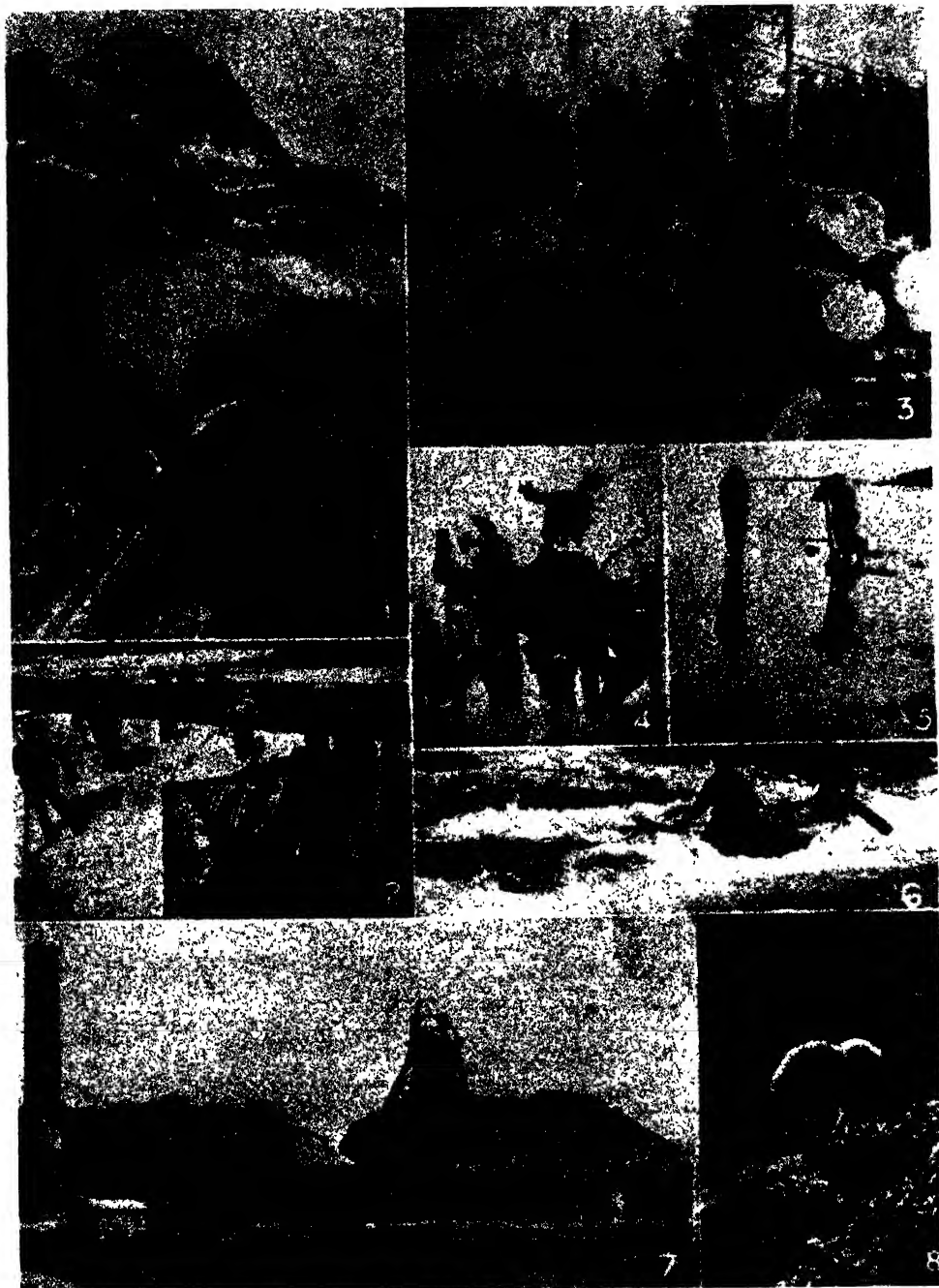
The United Kingdom, however, so far from endeavouring to appease this resentment, decided to make use of her new domains in an attempt to relieve herself of some of the internal difficulties experienced at the end of the Napoleonic Wars, and accordingly, in 1820 and 1821, sent out five thousand settlers to the Cape. A few years later, British traders who had ventured by sea to Port Natal secured a precarious cession of land.

The Boers, as the Dutch settlers were called, chafed under British rule and were made desperate by the decision of 1833, when the British Government decided to abolish slavery throughout the Empire. The Boer farmers, like the West Indian sugar planters, were faced with ruin, for they relied almost entirely on slave labour.

Smarting under this and other grievances, the Boer settlers in 1836, with their families and possessions, journeyed north in the hope of evading British rule. They dispersed far and wide, forming little Republican communities in regions that are now Natal, the Orange Free State, and Transvaal. Britain and its local representatives, however, gave them no peace, and in 1843 Natal was formally constituted a British colony. Five years later (1848) Sir Harry Smith proclaimed British sovereignty between the Orange River and the Vaal River, but under the Rand River Convention of 1852, the independence of the Transvaal Boers was recognized and two years later the independence of the Orange Free State was admitted. At the request of the local chiefs, British sovereignty in 1868 was proclaimed over Basutoland, and in 1871 over what became the British Province of Griqualand West.

Britain annexed the Transvaal in 1877, but after a revolt on the part of the Boers, gave recognition to the South African Republic. Further afield, Bechuanaland became British territory and in 1878 Walvis Bay was annexed.

In 1875 the Egyptian Khedive, Ismaïl, sold his shares in the Suez Canal Company, and Disraeli on behalf of the British Government, without waiting for the sanction of



CANADA

The vast majority of Canada's people is descended from European stock: its area is only slightly less than that of Europe. 1. Canadian National Railways express in the Rockies. 2. Boys playing ice-hockey at Montreal. 3. Lumbering: the pulp and paper industry is first, saw-milling second, in the number of hands employed. 4. Calgary Stampede, an athletic meeting of the great belt of fertile country which is Canada's greatest natural resource. 5. Digging clams. 6. Shooting White Horse Rapids on the French River. 7. Alban Shaft coal mine in Nova Scotia. Gold, alone of the minerals, exceeds coal in value of output. 8. Rocky Mountain goat in Jasper National Park.

Photos: Canadian Official News Bureau; Canadian National Railways; Canadian Pacific Railway; Fox; Associated Screen News

Parliament, bought them. In this way Great Britain obtained a controlling interest in the Canal, a vital link in the chain of communications with India.

Before the year 1882 was out, the British were in military occupation of Egypt, and the British Government became responsible for Egypt. In February, 1884, General Gordon, sent to extricate the Egyptian garrisons in the Sudan, reached Khartoum. The town fell into Mahdist hands in January, 1885, and Gordon met his death. Not until the closing days of the century was the Sudan re-conquered and Egypt was made subject to a British and Egyptian Condominium.

British trading interests in the Niger delta led to the Niger Coast Protectorate, and by the end of 1891 the British had added to the Empire the Somali Protectorate, together with a formal Protectorate over the island of Socotra, the Protectorates of East Africa, now the Kenya Colony, Uganda, Zanzibar, and Pemba, the Nyasaland Protectorate and the Rhodesias, Nigeria, and the Hinterlands of the Gold Coast and Sierra Leone.

As the nineteenth century drew to a close, events in South Africa moved rapidly to a climax. The Jameson Raid was a symptom of the bitterness that became intensified between English and Boers, and war was inevitable. (See SOUTH AFRICAN WARS.) In 1906, full responsible Government was given to the Transvaal, and in 1907 the same course was taken with the Orange Free State, then styled the Orange River Colony, and Boer Ministries took control in each. The two colonies then in 1910 linked themselves with the Cape Colony and Natal, and the Union came into existence.

TOWARDS REPRESENTATIVE GOVERNMENT

The acquisition of the Empire was but a prelude to the greater problem of governing and co-ordinating the Empire. It was not surprising that even in the earliest days, the young colonies clamoured for a large measure of self-government, since they knew the attitude of mind of those who governed them from England, and realized that they would always be sacrificed for the benefit of England, unless they were able to control policy. The change of mind which came with the loss of the thirteen colonies of North America was shown in 1791, when the British territory in Canada was divided into Upper and Lower Canada, and representative institutions were granted to both. It must not, however, be thought that the change of mind came from a change of heart. Self-government was only granted as a result of repeated agitation. But in time the wisdom of the new policy became apparent, and what at first was granted reluctantly was later given willingly. The process once started, continued with varying momentum, and at the beginning of the nineteenth century, representative institutions were to be found in Bermuda and in the old West Indian colonies, as well as in Nova Scotia, where, in point of fact, they dated from 1758. In 1867, with the passing of the British North America Act, the Dominion of Canada, eldest of the self-governing Dominions, was created.

In different territories the movement continued according to the varying circumstances. Australia became a self-governing Dominion in 1899 on the passing of the Imperial Act, although the Commonwealth did not come into being until 1901.

Cape Colony did not have a Parliament until 1854, and did not obtain full responsible government until 1872. Lord Carnarvon, who had played a large part in the passing of the British North America Act through the British Legislature, attempted in the 'seventies to prepare the way for a Union of South Africa, or at least a federation of the Colonies of South Africa, but such a Union was not forthcoming until 1910.

THE COLONIAL CONFERENCE PERIOD

The growth of the Empire during the nineteenth century gave rise to the necessity of regular conferences. Problems of defence were ever in the minds of the Ministers of the United Kingdom and their representatives overseas, and consequently in 1885 a standing Colonial Defences Committee was constituted. Two years later, in 1887, when the representatives of the self-governing colonies visited London for Queen Victoria's Jubilee, the first Colonial Conference was inaugurated, "to draw closer in every practical way the bonds which unite the various portions of the Empire."

A further meeting was held in 1894, at Ottawa, on the invitation of the Canadian Government, to discuss primarily the project of an All Red Pacific cable. When the Prime Ministers were in London for the 1897 conference, the Naval Agreement with Australia and New Zealand was maintained and the Cape Colony offered a first-class battleship for the Royal Navy, which was subsequently commuted for an annual money contribution.



IRISH FREE STATE

The major interests in the Irish Free State are live stock and live stock products, for which the climate is particularly suitable. 1. West door of Killiesbire church, Co. Carlow, typical of the Irish Romanesque style which flourished before the Anglo-Norman invasion. 2. O'Connell Street, Dublin. 3. Hurling, the most ancient national game. 4. Walking to work in Co. Donegal. 5. Children in class. The official adoption of Gaelic has brought a profound change in education. 6. Customs post on the Northern Ireland boundary. 7. Newtown bridge over the Boyne, Co. Meath. Behind are the ruins of King John's Castle.

Photos: High Commissioner for the I.F.S.; T. H. Mason; Irish Times; Topical; Photopress

At the 1902 conference, all the self-governing colonies, with the exception of Canada, became contributors to the Royal Navy.

THE WORLD WAR

The events of the World War are described elsewhere, and in this article we are content to note its effect on the Empire as a whole. So far from being a disrupting factor, the War proved to have a strong unifying effect. To all who knew the history of the Empire, the rally to the assistance of the Mother Country did not come as a surprise. So long ago as the fall of Khartoum in 1885 Australia had shown a keen anxiety to play her part in the Empire. On that occasion, New South Wales and the other Australian colonies, as they were then, offered their assistance. New South Wales made a spontaneous offer and proposed to pay all the expenses of equipping what was nothing less than an expeditionary force. So it was too in the South African War of 1899-1901.

The Dominions did not regard their action as rallying to the Mother Country. They regarded the World War as a conflict in which the Empire was engaged and that therefore they were automatically at war. Consider, as proof of this, the words of the Prime Minister of New Zealand speaking at the Imperial Conference of 1917, expressing the attitude of the Dominion Governments: "I am not one of those who think that the Dominion came into the War simply to assist what we are all pleased and proud to call the Mother Country. I do not look at it from that point of view at all. We came into the War as Overseas Dominions of the Empire because we are part of the Empire and because the Empire to which we belong was being attacked."

The extent of the Empire's efforts in the War is revealed by the following list of casualties :

	Men Enrolled	Killed	Wounded
United Kingdom	6,211,427	743,702	1,693,262
Dominions and Colonies	1,605,527	140,923	357,785
India	1,679,416	61,348	70,859
	<u>9,496,370</u>	<u>946,023</u>	<u>2,121,906</u>

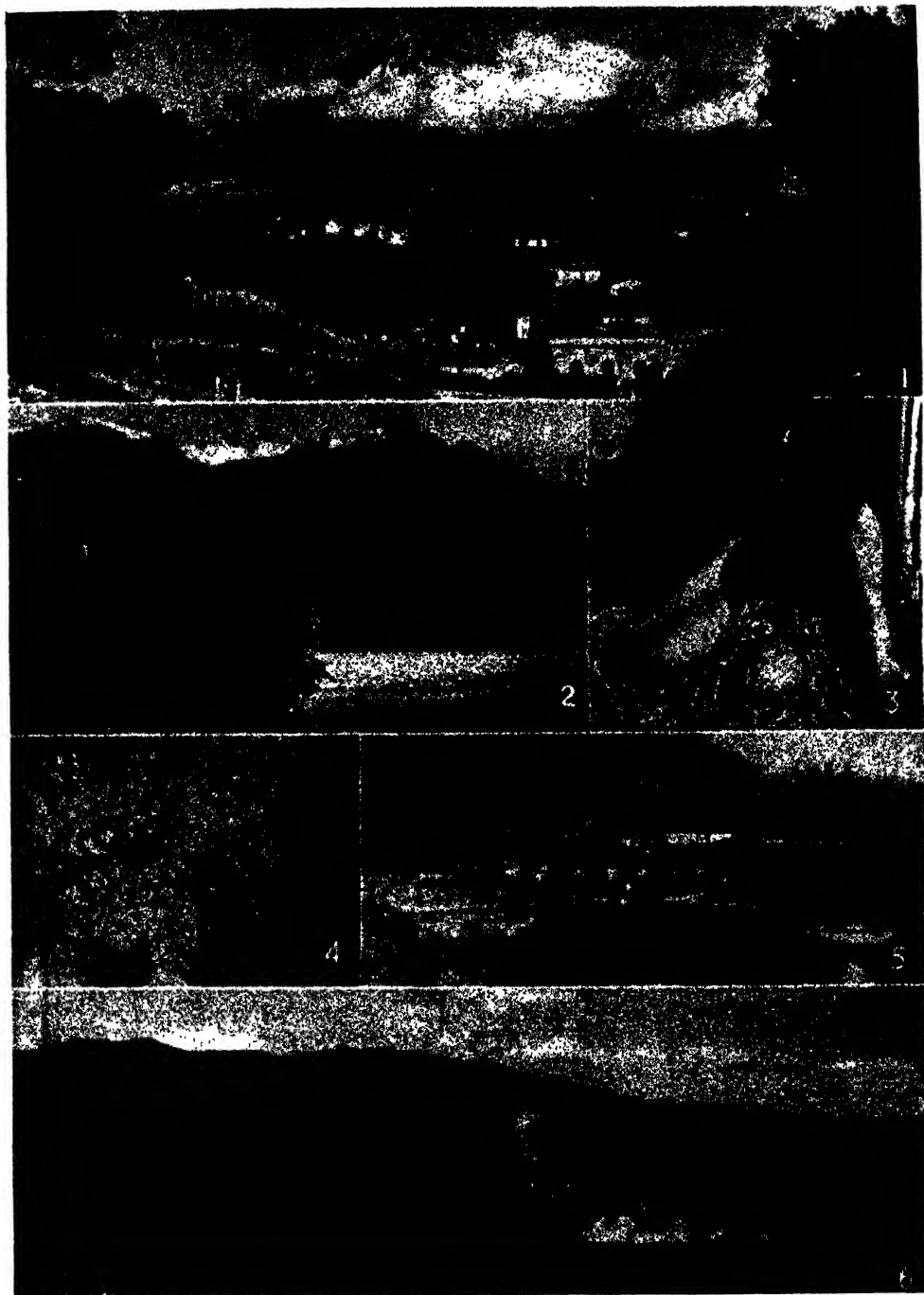
The World War brought new territory to the Empire, but not as of old, for the "gains," if they can be so called, came as Mandated Territories (which see).

During the War, the Prime Ministers of the Dominions took their places in the Imperial War Cabinet and at the Imperial War Conference of 1917 a resolution was unanimously adopted to the effect that "the readjustment of the Constitutional relations of the component parts of the Empire" should form the subject of a special Imperial Conference to be summoned as soon as possible after the end of the War, and that "any such readjustment, while thoroughly preserving all existing powers of self-government and complete control of domestic affairs, should be based upon a full recognition of the Dominions as autonomous nations of an Imperial Commonwealth and of India as an important portion of the same, should recognize the right of the Dominions and India to an adequate voice in foreign policy and in foreign relations, and should provide effective arrangements for continuous consultation in all important matters of Imperial concern and for such necessary concerted action, founded on consultation, as the several governments may determine."

After the War the signatures of the Dominion Prime Ministers were appended to the Treaty of Versailles, the Dominions became individual and separate members of the League of Nations and mandates were allotted to Australia, New Zealand, and the Union of South Africa. Major events since the War have been the creation of the Irish Free State, with full Dominion status, and the bestowing on India of a new constitution which is described in the Indian section.

IMPERIAL CONSCIOUSNESS

The first of the Imperial Conferences was held in 1907, when the self-governing colonies took the title of Dominions. It was then laid down that future meetings should be recognized as meetings of governments, and that the Prime Minister of the United Kingdom should preside, and not the Secretary of State for the Colonies. All the changes were in the direction of emphasizing the status of the self-governing colonies or dominions. Questions of defence



NEW ZEALAND

In an isolated position, almost the antipodes of Great Britain, New Zealand stands on a submarine ridge which probably had its origin in Tertiary times. 1. Mount Egmont (8266 ft.) chief peak of North Island. 2. Near Lake Hayes, Wakatipu. 3. Maori maiden in national dress. The Maoris are of Polynesian stock and have now largely adopted the white man's civilization. 4. Bubbling mud in a hot spring. Both geysers and hot springs are found on North Island. 5. Transporting sheep by river steamer. About half the value of New Zealand's exports is now from sheep skins, wool, and mutton. 6. One of the active volcanoes on North Island.

Photos: High Commissioner for New Zealand; Cherry Kearton

were very much in the minds of the Empire's leaders and at the Imperial Conference of 1911 it was agreed that in future, as occasion required, Dominion Ministers should take their places on the Committee of Imperial Defence.

Since the War, meetings of the Conferences have been held at regular intervals, at which further definitions of the relationship of the Dominions one to another have been made.

The constitutional problem was discussed and amplified at the 1930 Conference, and the principle laid down was later included in the Statute of Westminster, passed by the British Parliament in 1931.

THE STATUTE OF WESTMINSTER

The Statute of Westminster, truly described as the charter of Dominion Status, in effect gave legislative recognition to a relationship which had developed. By this statute, the United Kingdom Government surrendered any right or power it might have previously held, of legislating on behalf of the Dominions. The Governments of the separate Dominions stood in the same relation to the Crown in so far as each Dominion was concerned, as the Government of Great Britain did with regard to the United Kingdom and its colonies and possessions, excluding the Dominions. See *BRITISH CONSTITUTION*.

The Preamble to the Statute of Westminster, laid down that "any alteration of the law touching the Succession to the Throne or the Royal Style and Titles shall hereafter require the assent as well of the Parliaments of all the Dominions as of the Parliament of the United Kingdom." The constitution of Canada, contained in the British North America Acts of 1867 and 1930, is excepted from the operation of the Statute of Westminster by a special clause in the Statute itself.

The present status of the Dominions has wrought changes in the appointment of Governors-General. They are appointed by the King, acting on the advice of the Prime Minister of the Dominion concerned.

The amendment of the Coronation oath of King George VI gave further evidence of the advance in the legal status of the Dominions. In that oath specific mention was made of the people of Great Britain, Ireland, Canada, Australia, New Zealand, and the Union of South Africa, thereby showing that the Sovereign is King of each individual State.

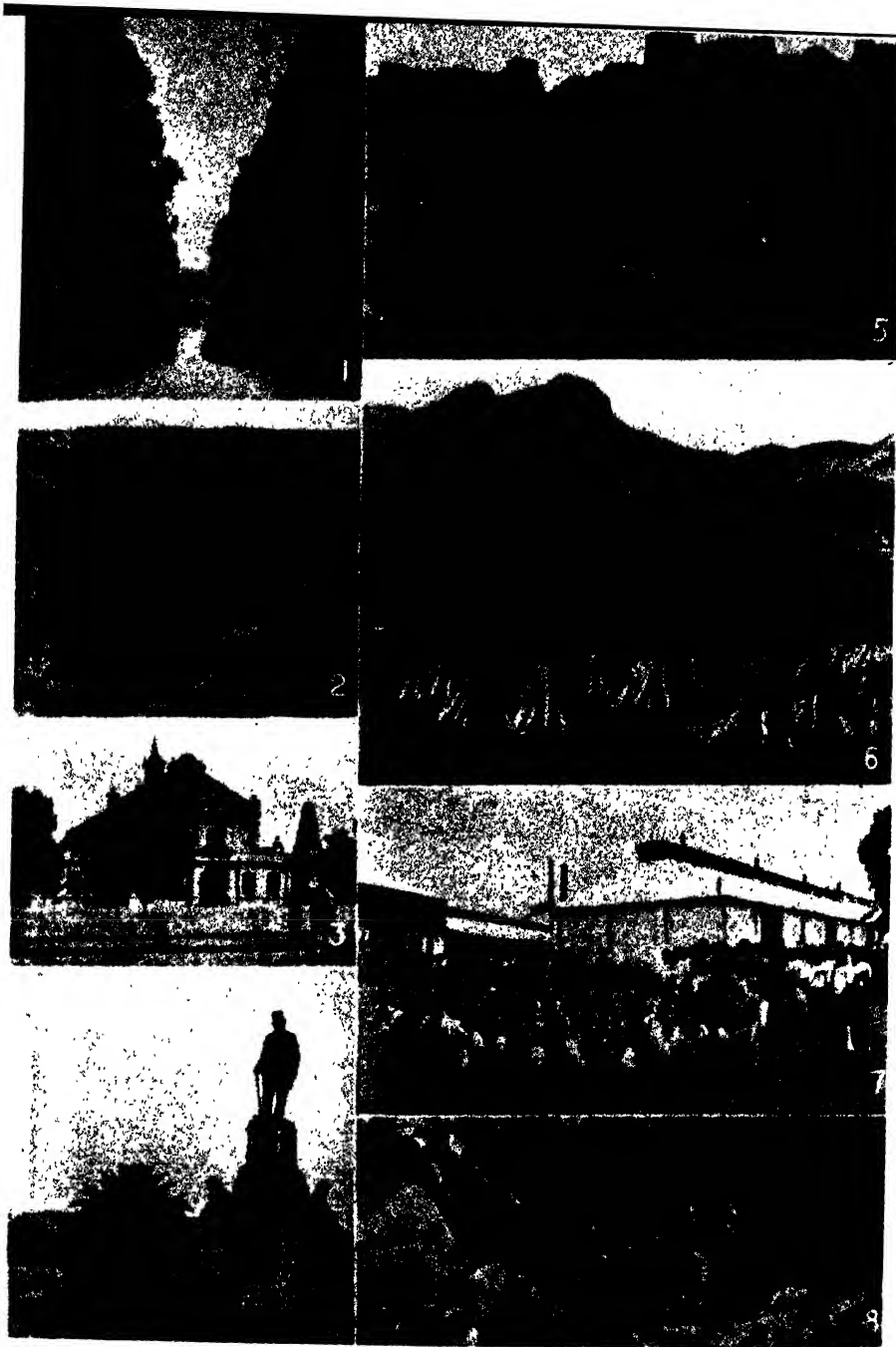
THE FUTURE

The period of expansion would appear to be over. The peoples of the Empire no longer seek to add new territories to the Commonwealth. Rather do they seek to develop and to improve the lands they already control. The relationship of the units of the Empire, too, will be further adjusted from time to time. There is nothing static in the Constitution. How it will develop is a concern of the future. The only clear fact that seems to stand out is that there is very little prospect anywhere for the creation of a central authority. The idea of Dominion autonomy forbids it. The Dominions are now free and powerful, growing in strength from year to year. The Crown is the symbol that holds this huge mass of peoples together, and there is unity too in the field of political ideas, a fervent belief in the ideals of freedom, but tempered with self-discipline.

TRADE OF THE EMPIRE

A common expression during the nineteenth century was "Trade Follows the Flag." Though there is a considerable amount of truth in such a statement, it does not express the whole truth. Often enough it is the flag which follows trade. It has not been by soldiers and sailors alone that the Empire has been won. The love of adventure and the hunger for land were not the only motives which impelled the Empire builders. The English business men seeking their legitimate profit, the draper, the corn-chandler, the chemist—these have often been the pioneers to whom England is indebted for part of her Empire.

The story of the development of British Empire trade really commences when on 10th December, 1551, London merchants formed "The Myserie and Company of Merchants Adventurers for the discovery of Regions, Dominions, Islands and Places Unknown." Three years later the company was incorporated by Act of Parliament, with a similar title. True, whatever trade it did was done with Russia, but the company was the forerunner of many more. The Acts which gave legal standing to the companies, like the Navigation Act passed in the reign of Elizabeth, had as a guiding principle that they should not carry "any commodity of this realm to their new trade but only in English ships and to be sailed for the most part with English mariners," for the purpose of "improvement of navigation,



SOUTH AFRICA

South Africa is a country of vast spaces and unrivalled visibility. The rock bones protrude through the scanty soil, and are seldom clothed in vegetation. Dutch and French pioneer colonists gave a tradition of art and of architecture which was developed by the wealth achieved as the country became "the half-way tavern of the Indian Seas." 1. Road in the forest area of the Northern Transvaal. 2. The Valley of 1000 Hills, Natal. 3. Mafeking Town Hall. 4. President Kruger's statue, Pretoria. 5. Main Gorge, Mont Aux Sources, in the Drakensberg. 6. Harvest in Cape Province. 7. Native dancers. War dances constitute a feature of native life on the Witwatersrand gold mines. 8. Underground drilling in a gold mine.

Photos: South African Railways

the glory of the Kingdom, and the increase of trade," to use the words of the original charter of the East India Company. The Merchant Adventurers of England received their Royal Charter in 1564 and in 1579 a similar charter was granted to the Eastland Company. Eventually, in 1600, a Royal Charter of Incorporation was granted by the Queen to "the Governor and Company of Merchants of London trading into the East Indies." The method of colonization or trading under the aegis of a Company became general. One company of importance was the company of the Massachusetts Bay, granted a Royal Charter by Charles I. In 1618 a Company of Adventurers of London trading with Africa was formed. A notable company was incorporated in 1670, when Charles II gave a charter to "the Governor and Company of Adventurers of England trading into Hudson's Bay."

In the early half of the seventeenth century, however, the world carrying trade was mainly in the hands of the Dutch. Accordingly, in 1651, the Long Parliament passed the first General Navigation Act. It provided that goods from countries outside Europe could be imported into England, Ireland, and the English colonies only in ships built and owned in England, commanded and manned by crews the majority of which should be Englishmen.

The Act made no discrimination between England and the Colonies. They were regarded as a single unit. The principles underlying the Navigation Acts were generally approved, and they were confirmed in further legislation of 1660. In that year it was laid down that no goods were to be carried to or from the Plantations, as the overseas settlements were called, except in ships owned by people of England, Ireland, Wales, or Berwick-on-Tweed, or were built in, or belonged to the Plantations.

The 1660 Act, however, carried still further the desire to stimulate British trade, even at the expense of the colonists. The colonists of the West Indies and North America were beginning to build up a considerable trade carried on directly with France and other Continental nations. The English shipping and wholesale houses resented this short-circuiting of their trade. Hitherto they had acted as both middlemen and carriers and received their profit in both capacities. The new act stipulated that all commodities such as sugar, tobacco, cotton, wool, etc., should be carried to England before being sold to Continental nations. In 1676 an order was made that all commodities meant for European trade must first be sent to England, even if they had not been specified by the 1660 and subsequent Acts.

An Act of 1663, known as "An Act for the Encouragement of Trade," had a further important trading provision. It laid down that with minor exceptions all commodities produced in Europe, and destined for the Plantations, should be first carried to England, Wales, or Berwick-on-Tweed, and there put on shore, before being carried to America. This Act, commonly known as the Staple Act, was expressly designed to keep the peoples of the plantations "in firmer dependence," on England, and to increase British trade and shipping.

The underlying principles of the Navigation regulations were maintained until they were repealed in 1849.

THE FREE TRADE PERIOD

Until about that period, the Empire had been, to all intents and purposes, a single economic unit, with its tariff policy "made in England." Colonial products entering the United Kingdom, and British goods entering the colonies, however, did enjoy some measure of preferential treatment. From 1821 to 1830, for instance, Cape Colony gave British imports preferential treatment, the *ad valorem* duty on British products being 3 per cent, while foreign products were subject to 10 per cent. This preference, with minor amendments, continued until 1855.

The sweeping away of the Navigation Laws, however, was not an isolated act, but was representative of the new mood that was becoming dominant in Great Britain. For good or for ill, the United Kingdom was adopting a policy of Free Trade. She wanted to buy goods in the cheapest markets of the world and wanted them to reach her in vessels that would charge the lowest freights. This meant that the colonies would lose the preferences they were enjoying. Canada, as an example, lost the preference on her wheat sent to Britain, and it was not surprising that in 1855, Canada made history by being the first colony to impose duties on British products. When Britain protested, Canada replied that this was a matter for herself to decide.

With Britain fully resolved on a policy of Free Trade, the colonies felt themselves free to undertake trading agreements elsewhere, if they wished.

In 1873, the Australian colonies asserted their right to discriminate in favour of each other, even to the disadvantage of other parts of the Empire. About the same period the Australian colonies also claimed their right to adhere separately to trade treaties made by Great Britain, or if it pleased them, not to adhere at all.



Of the 353,000,000 inhabitants of India, nearly 233,000,000, one eighth of the human race, are directly engaged in, or dependent on, agriculture. Climate varies from equatorial in the South to arctic in the Himalayas. 1. Temples at Patadakal, near Badami. 2. Remains of the historic Residency at Lucknow. 3. Archway to the Palace. Status Square, Mysore. 4. Interior of a Koti. Here sandalwood, one of the most valuable products, is cleaned, dressed, and classified. 5. Girls from Central India hiding their faces with saris. 6. Girl from a village near Delhi. 7. Native transport in northern Bengal. 8. Pilgrims to Kurukabetra arriving at the railway station. 9. Young tusker being "towed" by a trained elephant. 10. Camel cart in Delhi.

TOWARDS PREFERENCE

Towards the end of the nineteenth century, however, a new spirit was pervading the Empire. When in 1894 the colonies met in conference at Ottawa, they were strong in their approval of Imperial Preference, and at the 1897 conference they were insistent that subsequent commercial treaties should be formed so as not to bind the colonies without their consent. On the other hand, they indicated their readiness to give preference in their tariff systems to the products of the United Kingdom. Canada led the way in this new movement and gave Britain a preferential tariff in the same year. Within the next few years, New Zealand, South Africa, and Australia followed the Canadian lead.

With the dawn of the twentieth century, the Dominions showed a keen anxiety to develop the principle of Imperial Preferences. At the 1902 Colonial Conference, a resolution was passed to the effect that the colonies that had not already done so should, so far as their circumstances permitted, give substantial preferential treatment to the products and manufactures of the United Kingdom. This resolution was put into effect by New Zealand and South Africa almost immediately, and by Australia in 1906. The principle was recognized by the Dominions themselves and Canada, Australia, New Zealand and South Africa, made agreements in which they gave each other equivalent reciprocal privileges.

Great Britain, so far, had showed little inclination to abandon her Free Trade attitude, but the World War brought about a change in outlook. In 1917 a British Government committee, appointed to formulate a commercial policy after the War, recommended that the Government should declare in favour of their adherence to the principles that preference should be accorded to the products of the Dominions and in April of that year the Government announced an acceptance of that principle, making it quite clear, however, that this did not involve any taxation on food.

The principle was put into effect when in the 1919 Budget, the British Chancellor of the Exchequer introduced preferential rebates on imports from the colonies, and exemption from sur-tax, were granted on practically all articles under the then existing tariffs. Australia responded in 1920 by increasing its preference to British goods and gave assistance to British trade both by anti-dumping legislation and by granting her preferential treatment in the market for dyes and dyestuffs.

The British Government intended to take a further step in the same direction and at the Imperial Conference of 1922 announced its readiness to enlarge the existing preference on dried fruits and increase the rebate on Empire tobacco, etc. A change in the British Government, however, prevented these measures being put into effect.

A further step towards increased Imperial trade, however, came in 1923, when Canada, having in mind the removal of certain restrictions on the importation of cattle into British markets, undertook to give a discount of ten per cent on existing duties on British goods.

As the years passed, however, there developed strong movements in favour of a greater development of Inter-Imperial trade, a view that was to lead to the Ottawa Agreements of 1932. The world economic crisis that preceded Ottawa, undoubtedly paved the way. By 1932 there was in existence a world-wide view that henceforth trade should be put on to some definite basis of agreement, and the United Kingdom, not only at Ottawa, but subsequently, entered into trading agreements with foreign countries.

It is important to understand the general structure of the British tariff system before the Ottawa Conference met in 1932.

Before 1932, Britain imposed duties only on a few commodities and these for purposes of revenue. They included such items as sugar, tea, wines, spirits, and, where these were dutiable commodities produced at home, a counter-nailing Excise duty was imposed. Occasionally some slight preference was given to the home and Empire producers. In the case of sugar, for example, the rate payable on home-produced sugar was lower than that paid by imported Empire sugar, which in turn was much lower than that charged on foreign sugar. Britain's other taxation on imported goods was not considerable, consisting of the McKenna duties, first introduced during the War, and the protective duties under the Safeguarding of Industries Act, to cover articles which might be of national importance during a period of war.

In the economic, political and financial crisis of 1931, the British Government thought it necessary to curtail imports substantially to adjust the balance of trade, and such measures as the Abnormal Importations Act and the Horticultural Products Act found their way to the Statute Book, to be followed by the Comprehensive Import Duties Act, which came into force on 1st March, 1932.

That Act instituted a general *ad valorem* duty of 10 per cent on all goods (other than those in a short free list) coming into the country and not already dutiable under other Acts. In this Act, however, Britain recognized the special position of the Empire overseas. Until

DOMINION CANADA

POPULATION IN MILLIONS			RAILWAYS MILES IN OPERATION		MOTOR VEHICLES (INCL. CYCLES) 1 CAR = 100,000 VEHICLES	
1871		3.6	1871	2 695	1905	
1881		4.3	1881	7 331	1910	
1891		4.8	1891	13 838	1915	
1901		5.3	1901	18 140	1920	
1911		7.2	1911	25 400	1925	
1921		8.7	1921	39 192	1930	
1931		10.3	1931	42 280	1935	
1935		10.9				

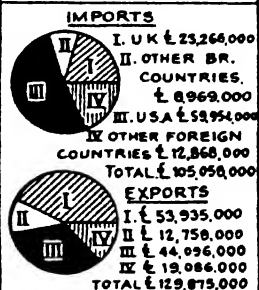
SOUTH AFRICA

POPULATION IN MILLIONS			RAILWAYS MILES IN OPERATION		MOTOR VEHICLES (INCL. CYCLES) 1 CAR = 50,000 VEHICLES		PASSENGER CARS IN 1000'S		NET TONNAGE & CLEARED IN BRITISH MILLION OF TONS	
1891		0.6	1891	2 318	1926		114 000	80	1913	
1904		1.1	1904	4 942	1929		174,000	130	1920	
1911		1.2	1911	7 548	1932		189,000	143	1925	
1921		1.5	1921	9 617	1935		254,000	213	1930	
1936		1.9	1931	13 175 (Inc SW Afr)					1935	

AUSTRALIA










POPULATION IN MILLIONS			MOTOR VEHICLES (INCL. CYCLES) 1 CAR = 100,000 CARS		WORLD TONNAGE VESSELS IN 1000'S OF TONS		NET TONNAGE ENTERED & CLEARED IN MILLION OF TONS	
1881		2.25	1922		136,848		1913	
1891		3.1	1927		495,540		1920	
1901		3.77	1932		587,920		1925	
1911		4.45	1935		688,450		1930	
1921		5.43					1935	
1931		6.51	<u>DENSITY OF POPULATION</u>					
1933		6.62	VICTORIA		N.S. WALES.			
1935		6.75	1934	1935	1936			
			13.77	20.91	4.43			

NET TONNAGE OF VESSELS ENTERED AND CLEARED IN MILLIONS OF TONS.				FOREIGN TRADE 1934	
5.	BRITISH		FOREIGN	TOTAL	IMPORTS
	1913	1920			
565	9,158	95,284	20.87	8.69	29.56
	1925	408,790	27.62	18.38	46.00
	1930	724,048	31.71	22.88	54.59
	1934	1,232,089	35.13	21.93	57.06
	1935	1,176,126			



OF VESSELS ENTERED MILLIONS OF TONS.		FOREIGN TRADE 1934	
FOREIGN	TOTAL	IMPORTS	EXPORTS
2.2	10.6	I. U.K. £ 32,301,000 II. OTHER BRITISH COUNTRIES £ 6,480,000 III. U.S.A. £ 10,817,000 IV. OTHER FOREIGN COUNTRIES £ 16,600,000 TOTAL £ 66,198,000	I. U.K. £ 9,457,000 II. OTHER BRITISH COUNTRIES £ 3,435,000 III. U.S.A. £ 574,000 IV. OTHER FOREIGN COUNTRIES £ 9,547,000 TOTAL = £ 23,013,000 + £ 34,631,000 GOLD
1.4	8.1		
2.4	10.6		
3.6	10.9		
4.8	13.5		

OF VESSELS ENTERED IN TONS.		RAILWAYS MILES OPEN FOR TRAFFIC		FOREIGN TRADE 1934/35	
FOREIGN	TOTAL	1913	1920	IMPORTS	EXPORTS
2,800	10.6	17,634	23,147	I. U.K. £ 30,786,000 II. OTHER BRITISH COUNTRIES £ 10,800,000 III. U.S.A. £ 11,042,000 IV. OTHER FOREIGN COUNTRIES £ 18,589,000 TOTAL = £ 71,217,000	I. U.K. £ 42,803,000 II. OTHER BR. COUNTRIES £ 8,433,000 III. U.S.A. £ 2,199,000 IV. OTHER FOREIGN COUNTRIES £ 28,425,000 TOTAL = £ 81,860,000
1,784	8.1				
2,715	11.2	24,844	26,605		
2,902	10.9		27,129		
3,806	11.9				

TRADE 1934.		MOTOR VEHICLES (INC CYCLES)		IRISH		FREE		STATE	
		1 CAR = 100,000 VEHICLES		POPULATION IN MILLIONS		NET TONNAGE VESSELS ENT.& CLEARED IN MILLIONS OF TONS. 1936		RAILWAYS IN MILES 1936	
£ 12,631,000				1911	 3.1			IRELAND	
ER BR. COUNTRIES				1926	 2.97			■ 2 907	
£ 5,879,000				1931	 2.96	BRITISH	 12.9	GREAT	
S.A. £ 2,999,000				1936	 2.96	FOREIGN	 5.4	BRITAIN	
HER FOREIGN						TOTAL	 18.3	20 170	
INTRIES									
£ 3,560,000									
£ 25,069,000									
				FOREIGN TRADE IN MILLIONS OF £S. 1934.					
£ 29,857,000				EXPORTS.			IMPORTS.		
ER BR. COUNTRIES									
£ 1,890,000									
A. £ 957,000									
HER FOREIGN									
£ 3,591,000									
£ 36,295,000				I. U.K. 26			I. 16.4		
				II. OTHER BRITISH COUNTRIES 2.3			II. 0.2		
				III. U.S.A. 1.8			III. 0.1		
				IV. OTHER FOREIGN COUNTRIES 8.8			IV. 0.8		
				TOTAL = 38.9			TOTAL = 17.6		

15th November, 1932, Dominion goods were exempted from this duty and the same exemption was given without limit of time to Colonial products. In addition the Act established an Import Duties Advisory Committee to make recommendations to the Treasury for revisions of the general tariffs.

Generally, this Committee was responsible for all-round increases in British tariffs, but throughout 1932, it decided to leave untouched the essential foodstuffs.

OTTAWA CONFERENCE

The Imperial Conference of 1930 discussed the problem of inter-Empire trade and the decision was taken to hold a special economic conference at Ottawa. The British Government gave an undertaking that in the meantime they would not, for a period of three years, or pending the result of the Ottawa Conference, reduce the existing preferential margins that were accorded to imports into the United Kingdom from other parts of the Empire. This included the preferential margin on such commodities as tobacco, sugar, wine and dried fruits.

When the representatives of the United Kingdom assembled at Ottawa, the Colonies, Dependencies, and Protectorates were not officially represented at the Conference, but of course, their views were constantly being brought to the notice of the chief participants. After much discussion, Britain was able to draw up trade agreements with other parts of the Empire.

These agreements, concluded for a period of five years, all contained an article to the effect that the United Kingdom would not reduce her general *ad valorem* duty of 10 per cent on foreign goods without the consent of each of the Dominions.

The result of the Ottawa Conference was that the British Government agreed to increase her own tariffs in order to give additional preference to the Dominions. In return, the British Government received various concessions from the Dominions, the guiding principle being that of equating costs of production between United Kingdom producers and their competitors in the countries concerned.

Canada agreed immediately to modify import duties imposed on 215 items. In 132 cases, the duties on British goods were to be reduced and in 79 of these cases they were to be admitted into Canada duty free. The remaining 83 modifications consisted of increased margins of preference in favour of British goods by increasing the duties of foreign goods. Over 40 per cent of the imports from the United Kingdom would immediately enjoy lower Custom duties; goods to the value of over 8,000,000 dollars being admitted duty free. Canada gave some minor concessions to cotton and wool textiles, rather more concessions to iron and steel, and substantial concessions to cutlery and anthracite coal.

The agreement with Australia provided that British goods should enjoy certain minimum preferences graded according to the duties chargeable on them, the minimum margin of preference ranging from 15 to 20 per cent.

Half the British imports into New Zealand were already admitted duty free, and in the remaining cases the New Zealand Government undertook to reduce the duty. South Africa gave increased margins of preference on British goods by increasing the duties on foreign goods. Newfoundland agreed to give a preference of 10 per cent on various goods, and India agreed to give a preference on certain specified goods, of 10 per cent in value, excepting in the cases of motor vehicles and parts where it would be 7½ per cent. Southern Rhodesia agreed to give increased margins of preference on certain goods.

Attached to the Australian agreement was a declaration by the United Kingdom with regard to the imports of frozen meat, regulating (by means of a quota system) the quantity to be imported. This quota system was intended to give protection to the English breeder of livestock, and limits were to be set upon the import of meat, not only from the Dominions but also from the foreign countries. Australia and New Zealand, however, would be allowed to expand their imports within a limit of 10 per cent over current supplies, while at the same time foreign supplies of frozen beef and mutton were to be cut down gradually to 65 per cent of the current total.

India recognized the principle of Imperial preference and gave Great Britain a preference which covered 26 per cent of her imports.

AFTER OTTAWA

The Agreements, of course, had their advocates and their critics. The effect that they had on trade is, no doubt, a question of interpretation of facts and figures. One fact is that the Empire purchased 48 per cent of the £425,900,000 worth of goods which were exported by Britain during 1935, whereas in 1932, the Empire made up 45·5 per cent of Britain's total market.

Similarly the proportion of imports received by the United Kingdom from British countries showed a continuous increase in each year since 1932, rising in 1936 to 39.18 per cent of the total, and being the highest recorded in any of the years for which comparative statistics are available. This was due, in the opinion of the editor of the *Board of Trade Journal*, to the passing of the Import Duties Act and the operation of the Ottawa Agreements.

Comparing 1936 with 1935, there was an increase in the proportion of British imports consigned from the Dominions as a whole, mainly owing to an appreciable rise by Canada. Decreases were recorded for the Union of South Africa, the Irish Free State and Newfoundland. Imports from India were proportionately much larger than a year earlier. On the other hand, the share supplied by the Colonies, Protectorates, etc., fell below the figure recorded for 1935, largely on account of further declines by British Malaya and Ceylon.

The increase compared with 1935 in the proportion of the United Kingdom export trade taken by British countries was shared by each of the Dominions, particularly New Zealand and the Union of South Africa, the latter displacing India from the position which it had held since 1896 as the principal market for British goods. India's share fell from 8.89 to 7.75 per cent, the lowest on record.

The following table shows, in order of their importance, the principal markets for British exports in 1929, 1934, 1935, and 1936.

Country	1929	1934	1935	1936
Union of South Africa	7	2	2	1
India	1	1	1	2
Australia	2	3	3	3
United States	3	6	4	4
Canada	6	4	5	5
Irish Free State	5	5	6	6
Germany	4	9	7	7
France	5	7	8	8
New Zealand	11	12	11	9
Argentine Republic	9	8	9	10
Denmark	12	10	10	11
Netherlands	10	11	12	12

In the following table there is shown the value of the United Kingdom exports, produce and manufactures, consigned to certain countries, per head of the population of those countries—

BRITISH EXPORTS PER HEAD OF THE POPULATION OF IMPORTING COUNTRIES

Countries to which Consigned	United Kingdom Exports per Head		
	1924	1935	1936
	£ s d	£ s d	£ s d
Irish Free State	15 14 9	6 16 3	7 1 10
Canada	3 1 2	1 19 1	2 2 6
Australia	10 9 3	4 7 3	4 15 3
New Zealand	15 0 7	8 11 5	11 0 5
Union of South Africa	4 3 0	3 18 2	3 18 9
India	5 8	2 2	1 11
West Africa	9 3	7 3	8 11
East Africa	6 2	4 2	4 5
British Malaya	2 16 9	1 13 0	1 17 3
Ceylon	18 0	11 4	11 5
<i>Foreign Countries</i>			
Sweden	2 6 1	1 11 2	1 13 2
Norway	3 3 11	2 6 0	2 9 5
Denmark	4 1 5	3 14 2	3 19 3
Netherlands	3 9 5	1 7 8	1 9 1
Belgium	2 19 4	1 0 11	1 2 9
Switzerland	2 18 1	19 7	18 9
Argentine Republic	2 16 3	1 4 10	1 4 0

After several years' experience of the Ottawa Agreements, the general trading position appeared to be—

AUSTRALIA. While import trade from the United Kingdom showed an increase in 1936, the share of the United Kingdom in the total of Australia's "competitive" trade declined appreciably.

CANADA. Under the Agreements, Canada's exports to Great Britain increased considerably more than her imports from the Mother Country, and 1935 Canadian exports to the United Kingdom increased by 69.9 per cent, while during the same period imports into Canada from the United Kingdom rose by only 24.8 per cent. A new Anglo-Canadian Agreement was negotiated in February, 1937, providing for the reduction of duties of about 40 per cent of British exports to Canada, while Britain also made some minor concessions.

INDIA. India and the United Kingdom have in the past ranked as each other's best customer, but the Indian Legislative objects to the principle of Imperial Preference, and on May 13th, 1936, the Government of India gave notice of denunciation of the Ottawa Agreement, as provided in Article 14. Negotiations for a new agreement were immediately started.

IRELAND. An unfortunate dispute over the payment of land annuities with the Irish Free State had a sequel in the passing of the Irish Free State (Special Duties) Act, of 1932. These were discriminatory reprisal duties, the avowed object of which was to exact from Irish exporters an amount equivalent to that of the land annuities withheld by the Free State Government. As meat and dairy products are the chief exports of the Irish Free State the duties were imposed specifically on live and dead cattle, averaging originally almost 40 per cent of their value, and on butter, eggs and cream at 30 per cent *ad valorem*, in both cases in addition to other duties. Fortunately, the United Kingdom and the Free State drew up a Coal-Cattle Pact which benefited both the Irish cattle trade and the British coal industry. The Pact of 1936 freed a large section of the trade in Irish livestock and British coal and other manufactures from prohibitive duties, and in January, 1937, this Agreement was extended for another year.

NEW ZEALAND. New Zealand's dependence on the United Kingdom as a market for its produce is such that trade between the two countries in 1935 established a credit balance of £20,400,000, whereas trade with the rest of the Empire showed an adverse balance of £5,700,000, and that with foreign countries one of £4,400,000.

UNION OF SOUTH AFRICA. The Union has within recent years enjoyed unprecedented prosperity, and, as we have seen from the above tables, in 1936 became the principal market for British exports.

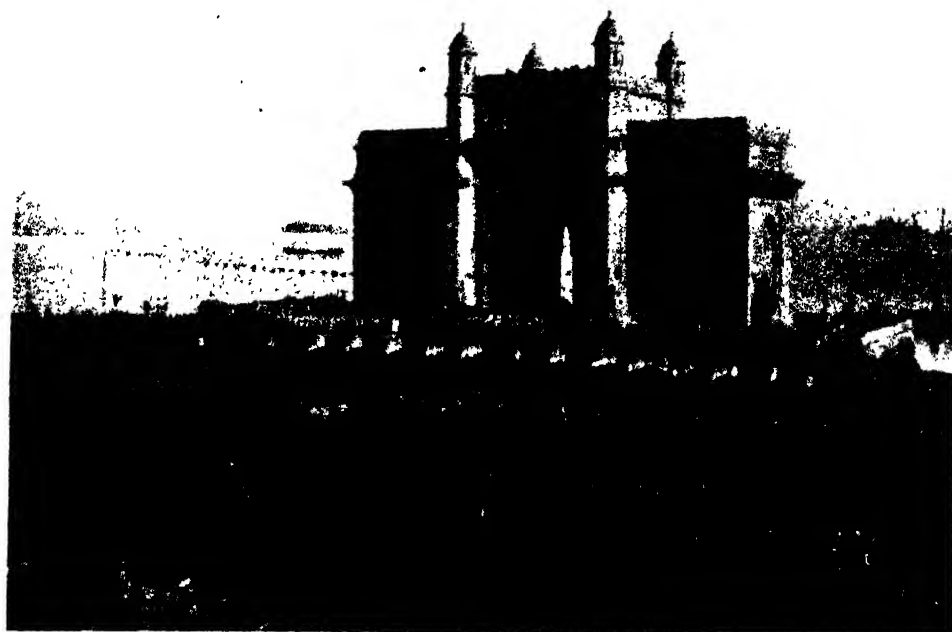
HISTORY OF INDIA

Hindu India. The sub-continent which bears the name of India may be described as a gigantic triangle, with its base the Himalaya mountains and its apex Cape Comorin. The total area of the country is roughly 1,900,000 square miles, with a population of some 350 millions, of many races and tongues. India is cut off from the rest of Asia by the mountain barrier which forms its northern boundary, and for this reason has developed a culture and civilization of its own.

Remnants of the earliest inhabitants of India may be still found in the shy, aboriginal folk who dwell in the inaccessible jungles of the Deccan plateau and the neighbouring tracts of Orissa. After them came a dark, short race, who were the ancestors of the Tamil or Dravidian-speaking peoples, and are now found chiefly in the Madras Presidency and Mysore. The last comers were the Aryas, or Nobles, as they called themselves, a comparatively fair, tall, and straight-nosed people, who broke off from their kinsfolk the Iranians, somewhere in the neighbourhood of the modern city of Balkh, and found their way into the northern

Punjab. The Aryas spoke a language of the same stock as those of Europe, and worshipped deities closely akin to those of ancient Greece. They celebrated the deeds of their heroes, and sang the praises of their gods, in a number of fine hymns known as the Vedas. The Vedas are the earliest literature in any Indo-European tongue, and are of priceless value for the study of comparative religion and philology. Hindus to-day look upon them as the source of all knowledge.

As time went on, the Aryas gradually spread into the valley of the Ganges, where they settled down, conquering or absorbing the earlier inhabitants. The peculiar organization known as the caste system now made its appearance. The people were divided into numberless castes or watertight communities, none of whom could dine together or intermarry. The castes fell into four great groups, the Brahmins or Priests, the Kshattriyas or Warriors, the Vaisyas or traders, and the Sudras or outcasts. To-day, most of the castes are regarded as belonging to the first or last of these groups. The



THE GATEWAY OF INDIA AT BOMBAY

The Times of India



DAULATABAD FORTRESS

Formerly a city, Daulatabad is now only a village. The fort stands on a conical rock crowning a hill that rises almost perpendicularly from the plain to a height of about 600 ft. The outer wall was once $2\frac{1}{2}$ miles in circumference and enclosed the city of Beoguri. Between the wall and the base of the upper fort are three lines of defence.

Photo - Keystone

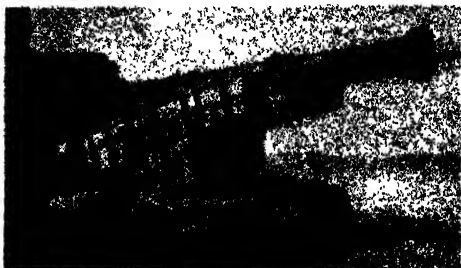
Brahmins gradually became all-powerful, and the simple nature-worship of the Vedas was replaced by a complicated esoteric ritual, which was known only to the priests.

The seventh century was a period of spiritual unrest all over Asia. At the same time as Heraclitus was carrying on his inquiries into the nature of things in Ephesus, Confucius and Lao-Tse were preaching new standards of conduct in China, and Gautama and others were leading a revolt against priestcraft in India. Gautama, afterwards called the Buddha or Enlightened One, taught a simple creed. Like other Hindus of his day, he believed in reincarnation. A man's next birth depended upon his *Karma*, or deeds in a previous existence. When, by the suppression of evil desires, the individual had shed the accumulated *Karma* of his past lives, there is nothing left to be reborn, and he passes into Nirvana, as the dewdrop is absorbed in the ocean. At the same time, Buddha insisted on the practical virtues of charity in thought and deed, abstention from evil-speaking, lying and covetousness, and from the taking of life. The Emperor Asoka (264-227 B.C.) became a convert to Buddhism, and for thirty-eight years ruled his vast empire in strict accordance with the pure and simple teachings of the Master.

The sword was sheathed; no animals were killed for food; roads were built, wells dug, and hospitals opened for man and beast. India during this brief period presented a picture such as the West has never experienced. Asoka was on friendly terms with Greece, and sent missionaries to preach the Law of the Buddha to various Greek states. During the succeeding period Greece and India were in close touch. Indian merchants and philosophers were a familiar sight in the market-places of Alexandria and Antioch, while from Greece the Indians appear to have learnt to build temples in stone, and to make images of their gods.

Ancient Hindu civilization reached its climax between A.D. 300 and 600. The powerful Gupta dynasty produced a number of enlightened rulers, who were themselves scholars and patrons of art. Architecture, sculpture, painting and music reached a high standard of perfection. The Sanskrit language was elaborated into a highly-polished tongue. The most characteristic feature of the age was the drama, which was patronized by the Court. *Shakuntala*, the masterpiece of Kalidasa, India's greatest dramatist, won the enthusiastic praise of Goethe. After the middle of the sixth century, the Gupta Empire began to decline

the Ephthalite Huns from Central Asia broke through the north-western passes, and the people, enervated by long immunity from attack and by the pacifist doctrines of



THE FAMOUS BALA HISAR GUN AT DAULATABAD
Age has made it necessary to prop up the gun
with wooden supports.

Photo: Keystone

the Buddhist creed, were in no condition to resist them.

From the middle of the seventh to the middle of the ninth centuries is one of the blank periods in the history of northern

India. All was in a state of confusion, and when at last the scene again clears, the whole aspect has changed. Except in Bengal, Buddhism has almost disappeared, and orthodox Hinduism has reasserted itself. The gods now worshipped are Shiva and his consort Parvati, and Vishnu in his many incarnations. Shiva is dark and terrible; Vishnu is mild and benevolent. Vishnu has come to earth in a series of Avatars or Incarnations to help mankind. Of these the principal are the hero-god Rama, and Krishna. The ruling people were now the Rajputs, or "Sons of Kings," who claimed descent from the ancient Kshattriya or Warrior caste. The Rajputs formed a number of clans, surrounded by their retainers, who spent their time in fighting among themselves. The Rajput was brave and chivalrous, and his women shared his martial spirit. The Rajput princess chose her own husband after a tourney held among the neighbouring chiefs, and when he died in battle, she followed her lord to the pyre by the terrible rite known as Suttac.

A word must be said about southern India. The Tamils developed a civilization



CHARIOT PROCESSION, DUSSEHRA, MYSORE
Indian Railways Bureau



A CROWD MOVING TOWARD THE HOLY TANK AT KURUKSHETRA

Islam, puritanical and monotheistic, is the antithesis of Hinduism, with its temples and images of innumerable gods. Consequently the religions of India have exerted considerable influence on its history.

Photo: Indian Railways Bureau

of their own, which was only slightly affected by Aryan culture from the north. Southern India was rich in commodities required in the West, pearls, precious stones, and especially pepper and other spices. As early as the ninth century B.C. the ships of Hiram, King of Tyre, came to Ophir (probably on the west coast) to buy "ivory, apes and peacocks" for King Solomon, and later, the Romans had trading factories at Cranganore, Madura, and other places. Dravidian civilization reached its climax under the Chola kings. In the tenth and eleventh centuries, these monarchs built up a great empire in the South and maintained a strong fleet which dominated the Bay of Bengal, and traded with Java, Sumatra, and China.

The Mohammedans. The Prophet Mohammed was born at Mecca in Arabia in about A.D. 570. His preaching at first only excited derision, and he was compelled to flee, with a handful of followers, to the neighbouring town of Medina. A.D. 622, the year of the Flight, is the first year of the Hegira or Mohammedan era. The tide now began to turn, and when Mohammed died ten years later, his followers were masters of Arabia. His successors the Caliphs, swept over

Egypt, Syria, and Persia, and as far as Spain; nothing could withstand the fanatical enthusiasm of the followers of the new creed. In A.D. 711, the Arabs conquered Sind. It was not, however, until the beginning of the eleventh century that Sultan Mahmud, from the little mountain state of Ghazni in Afghanistan, conceived the idea of raiding the rich plains of India; he and his followers were not the more refined Arabs, but rude Turki tribesmen from Central Asia. The raids were carried on after Sultan Mahmud's death by another Turki chieftain, Mohammed of Ghor. The Mohammedans met with fierce resistance from the Rajputs, but the Hindus were unable to withstand the more hardy horsemen from the north, and in 1192, the Rajput leader, the heroic Prithiraj, was defeated and killed. The chief reason for the comparatively easy conquest of the Hindus seems to lie in the fact that the Mohammedan religion teaches universal equality and brotherhood, whereas the Hindus were split into numberless small states, each at variance with the other.

In 1193, a Turki chief named Kutb-ud-din Aibak conquered Delhi, and gradually subdued northern India. The early Sultans



THE 56TH RIFLE REGIMENT ON THE MARCH

Roads are a vital factor in the pacification of the North-West Frontier.

Photo. Topical

of Delhi were intolerant rulers. Islam is fiercely puritanical and monotheistic, and is the very antithesis of Hinduism, with its temples and images and innumerable gods; the early Sultans thought it a religious duty to demolish Hindu shrines, smash idols to pieces, and put the Brahmin priests to the sword. From the Delhi sultanate arose a number of subordinate kingdoms in Gujarat, Bengal and the Deccan, which one by one asserted their independence.

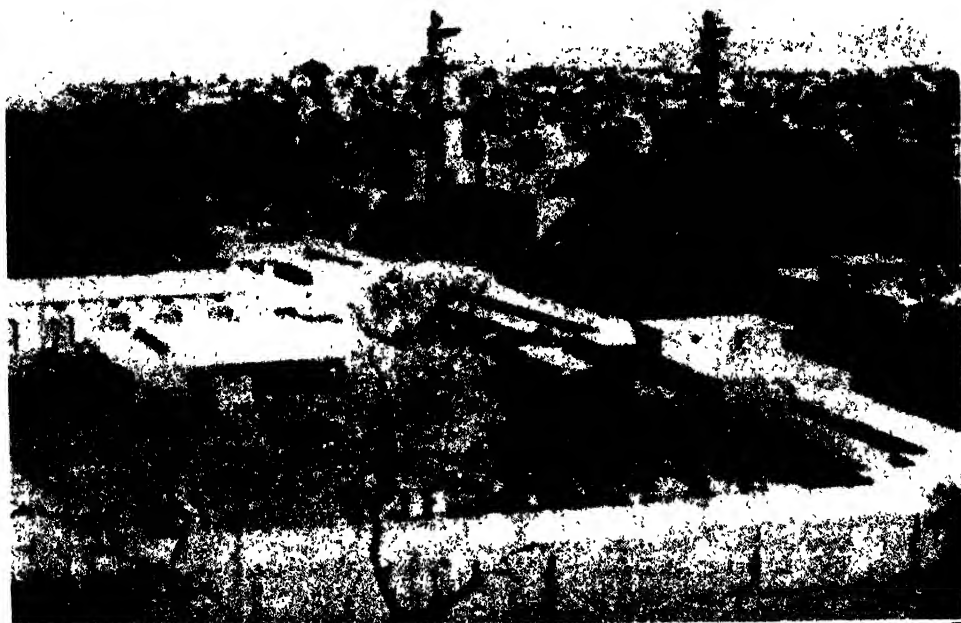
In 1526, an adventurer of the name of Babur invaded India, overthrew the reigning Sultan at the battle of Panipat, and founded the Mogul Dynasty. The greatest of the Mogul Emperors was Akbar (1555-1605), one of the world's most enlightened kings. Akbar's chief claim to fame was his attempt to unite Hindus and Mohammedans. He married a Rajput princess, and gave Hindus high offices at his court. He organized the government, and tried to found a new creed, embodying the best features of all religions. Under his successors, Jehangir and Shah Jehan, the Mogul Empire rose to almost unexampled magnificence. At Delhi splendid marble palaces were erected; the Emperor's

jewelled Peacock Throne alone was worth millions of pounds, and the Taj Mahal, the tomb erected at Agra for the Empress Mumtaz Mahal, is regarded as one of the noblest monuments in the world. The last great Mogul Emperor was Aurungzebe (1659-1707). Aurungzebe was a fanatical puritan. He completely reversed the liberal policy of his predecessors, demolished temples, reinforced the poll-tax on Hindus and devised other repressive measures. In 1682, he embarked upon a fatal campaign in the Deccan, where he was opposed by the Marathas, a Hindu race, which was founded by a great national leader of the name of Shivaji. From 1682 to 1706, the Mogul armies were marching about the Deccan. They were no match for the wily Marathas, who were adepts at guerilla warfare, and in 1706, Aurungzebe, now eighty years old, was forced to withdraw, and died broken-hearted at the town of Aurangabad in the following year.

British India. After the death of Aurungzebe, the Mogul Empire quickly broke up. Independent rulers set themselves up in Bengal, Oudh and Hyderabad; in Mysore,



AN OLD GATEWAY AT BIKANER, RAJPUTANA, BUILT BEFORE COLUMBUS DISCOVERED AMERICA
K7



PESHAWAR FROM THE FORT

The capital of the North-West Frontier Province controls the entrance to the Khyber Pass, and the trade between India and Afghanistan.

Photo Topical

a soldier of fortune named Hyder Ali appeared. Central India was in the hands of the Marathas, who dominated Hindustan until their disastrous defeat by Afghan invaders at Panipat in 1761. Meanwhile the Europeans had appeared on the scene. The earliest were the Portuguese, who landed at Calicut under Vasco da Gama, and at one time had a flourishing state with its capital at Goa. By the eighteenth century, the Portuguese

who began to organize the government on a regular footing, and in 1773, Parliament passed the Regulating Act, placing the East India Company's territories under a Governor-General at Calcutta, and setting up a Supreme Court of Judicature. The eighteenth and early nineteenth centuries were periods of almost incessant warfare. Tipu Sahib of Mysore was defeated and killed in 1799; the Maratha Confederacy was overthrown



A JIRGAH

A meeting between British authority and tribal leaders on the North-West Frontier.

Photo: *Times of India*

power was on the decline, and the two rivals for supremacy were the English and the French. The defeat of the French was due partly to their loss of command of the sea, but mainly to the genius of Robert Clive. The French never recovered from the destruction of their capital at Pondicherry in 1761; meanwhile, Clive had landed at Calcutta, and defeated the army of the Nawab of Bengal at Plassey in 1757. In 1765, Clive obtained from the Mogul Emperor the *Diwani*, or right of administering and collecting the revenues of the province of Bengal, and so laid the foundation-stone of the British Empire in India. Clive was succeeded by Warren Hastings (1772-1785)

in 1817; and the Sikhs in 1849. Burma was annexed in 1852. The surviving Indian princes were induced to sign subsidiary alliances, by which they were to disband their armies, and place themselves under British protection. A new era began with Lord Bentinck (1828-1837). Bentinck declared that "British greatness was founded on Indian happiness"; he abolished evil customs such as Suttce and Thugce, and introduced English as the medium of higher education. It was confidently assumed that the result would be "so far to improve the character of our Indian subjects as to enable them to govern and protect themselves." It is possible, however, to move too fast in

India; and the sweeping reforms of Lord Dalhousie, who introduced railways and telegraphs, and sought to abolish altogether the corrupt and inefficient Indian States, went far towards provoking the Indian Mutiny of 1857-58. The Mutiny, with all its tragic incidents, was a blessing in disguise, for it swept away a system which was already antiquated.

In 1858, India passed under the Crown, and Queen Victoria's noble proclamation, promising a general amnesty and non-interference in religious matters, and guaranteeing the rights of the Indian Princes, did much to appease the bitter feelings excited by the outbreak. The nineteenth century was a time of peaceful and steady progress. India shared in the general prosperity. Roads and railways were built, and huge irrigation works mitigated the severity of famines. Schools and hospitals appeared all over the country, and Universities were established in every province. Lord Curzon (1899-1905), was the ablest of the Victorian Viceroy, but like Dalhousie, he caused much discontent by his sweeping reforms, especially the Indian Universities Act and the Partition of Bengal. Bengal now became a centre of political unrest. Lord Minto (1905-10) met the situation by the Morley-Minto Reforms, which gave India her first real instalment of self-government. The remaining clouds were dispersed by the visit of Their Majesties King George V and Queen Mary in 1911, when the King-Emperor announced the annulment of the Partition and the transfer of the Central Government from Calcutta to India's historic capital at Delhi. Princes and people enthusiastically supported the Empire in the World War of 1914-18, and the Mesopotamian Campaign was fought almost entirely by the Indian Army. In 1917, Mr. Edwin Montagu, Secretary of State for India, made the historic pronouncement that the policy of His Majesty's Government was "the increasing association of Indians in every branch of the administration, and the gradual development of self-governing institutions, with a view to the progressive realization of responsible government in India as an integral part of the British Empire." The period following the War, however, was one of intense discontent and disillusionment, and disorders broke out all over the country, leading in some cases to grave loss of life and destruction of property. The trouble was largely economic in origin; the Indian peasant was very badly hit by the slump in world prices. The Montagu-Chelmsford reforms were rejected

as inadequate, and the Indian National Congress, a body of advanced politicians led by Mr. M. K. Gandhi, demanded complete independence; a Parliamentary Commission under Sir John Simon which visited India in 1927 was boycotted. Government, however, laboured incessantly for peace. In 1930, a Round Table Conference was called in London, and Indian politicians of all parties, including the Indian States, were invited to attend. The evidence was then considered by a Joint Select Committee, and



INVESTITURE DURBAR

His Excellency the Governor of Bengal investing the Maharaja of Cooch Behar with ruling powers over 600,000 people on his coming of age.

Photo Keystone

as the result of seven years' deliberation, the Government of India Bill was laid before Parliament in December, 1934. Subject to certain reserve powers in the hands of the Governor, the provinces are to be completely autonomous; the central government is to be of the federal type, and to consist of representatives both from British India and the Indian States. This is a great advance on anything which has hitherto been tried. The central government, though not autonomous like the provinces, will enjoy a very large measure of responsibility.

At the same time, active steps are being taken to improve the lot of the peasant, and to Indianize the Civil and Military services. India is now more prosperous and contented than at any period since the World War, and is within measurable distance of the goal announced by His Majesty's Government of Dominion Status within the Empire.

AUSTRALIA SECTION

ABORIGINES. The Australian aborigines are a primitive nomad race scattered over the whole of the Australian continent, with the majority in the Northern Territory, Western Australia and Queensland. Their exact origin would seem to be lost in the mists of antiquity, but ethnological opinion tends to the theory that they were a pre-Dravidian and non-Aryan people who were forced south out of India by stronger tribes and, by way of the Arafura Sea, or Torres Strait—whose numerous islands would make convenient stepping-stones—eventually migrated to north Australia. As to whether the Australian continent already had human inhabitants when these migrants arrived there is no true knowledge, although the Old Men of the tribes to-day will sometimes tell stories—handed down from one generation to another—of such inhabitants. It is unlikely, however, that these are anything more than folk-myths, for all the ethnical evidence tends to show that the advance of the migrants was not opposed, and they steadily made their way into their new home—one stream of them down the centre, and others along the eastern and western coasts—until at last their spread was complete, and included even the island of Tasmania off the southern coast.

Physical Characteristics. The general physical characteristics of the aborigines are much the same throughout the tribes. The skin is smoky black, the hair black, woolly, close and short, the jaw heavy. The nose is wide and the lips are full, though to nothing like the extent that the lips of an American negro can be full. The colour of the eyes ranges from deep black to a brown with touches of gold in it. At first glance the skin appears to be coarse, but this is because of the dirt or remains of ceremonial or mourning clay with which it is often covered. Cleansed, the skin proves to be exceptionally smooth and silky, and covered with soft down.

The men usually are bearded and their eyebrows are bushy and overhanging, giving an expression of savagery that is often unfounded. In many tribes the limbs of both sexes are inclined to be disproportionately thin; but the carriage of both men and women is strikingly erect and their gait extremely quiet and easy, as befits a race of

hunters. Except among certain tribes in the north-west of Western Australia, where tallness is an outstanding feature, the height of the aborigines is that which among Europeans is classed as "average."

Nomadic Life. In their native state the aborigines wear no clothes and make no attempts whatever at settlement or cultivation. They are completely nomadic. They build neither houses nor huts, but only temporary shelters comprised of a sheet or two of tree bark, or boughs, laid on a crude frame of sticks. In height such shelters are usually less than six feet, and often they are merely lean-tos. A camp may consist of anything from two or three of these shelters, or "mai-mais" (pronounced "my-mys") to two-score or more, the whole giving to European eyes an impression of squalid poverty. But the aborigines would have nothing different. "What more do we need?" they ask in effect. "We stay not long anywhere and the mai-mais give us all the shelter we need and are easy to build, and it matters not if the camp becomes dirty, for soon we move off and build newly again."

They live entirely by the chase and by finding wild fruits, tubers and other indigenous vegetation. According to the effect of seasonal change on the edible vegetation, and the movements of the animals they hunt—kangaroos, wallabies, iguanas, etc.—they move from district to district. Often their travelling at such times is extremely leisurely; a mere mile or two may constitute a day's journey. On along through the bush, or along a winding beach, they will saunter, a straggling procession, the men with the spears and other weapons and the firesticks—pieces of a certain kind of wood for making fire by friction—the women with their few poor bundled possessions on their heads, likewise the smallest of their children, and the other children beside them, with through and about the procession a number of lean and mangy dogs. The aborigines are not going somewhere as we understand the term, but wandering; they are at home just wherever they happen to be, and when the mood takes them to camp, they do so.

When needs be, however, they can display remarkable physical endurance and ability to cover long distances on a minimum of food



AUSTRALIAN ABORIGINES

A primitive nomad race of which the origin has been lost, the Aborigines are thought to be a pre-Dravidian people from Southern India. 1. Making fire. 2. Craftsman making a stone axe. 3. Spearing fish from a dug-out canoe. 4. The weals denote a warrior. 5. Aboriginal family. 6. Head of an Aboriginal. 7. Ceremonial dance at Palm Island.

Photos: Agent-General for Queensland; Australian National Travel Association; Australian Trade Publicity

and water and find their way through the trackless bush with astonishing accuracy.

Bushcraft. They have, too, an exceedingly wide and intimate knowledge of the things of their environment—the animals, birds, and vegetation of the bush, the fish and other creatures of the sea. A glance is enough for any one of them to know the name and nature of a plant picked up haphazard, its flowering and seeding times, its edible or non-edible qualities; and the merest hint of a rustle in the trees is all that is needed to identify the bird or other creature that made it.

Water Travelling. For water travelling the aborigines have only the roughest of bark or log canoes. A bark canoe is simply a rounded sheet of tree bark with its ends fastened up, and hardly watertight at the best of times; but it is quite remarkable the distances an aboriginal can travel in one and the seas it can survive. The canoes are used chiefly for fishing purposes and the hunting of sea-turtles and dugongs (sea-cows).

Weapons. The principal ones are clubs—sometimes called "nullanullas"—spears and boomerangs. The spears are of two kinds—thrusting spears and throwing spears—and in many parts the throwing is done by means of a "woomera" or throwing-stick, which is a kind of stout baton with a projection that engages the end of the spear's haft and allows the spear to be thrown with a lever-like action. The distance that an upstanding aboriginal can send a spear by this means is very considerable, as also is the accuracy of the aim. The woomera is also used variously as a club, sword and walking stick. It is common to see an aboriginal standing on one leg and using a woomera to replace the other leg, which is tucked up under him in a rather comical fashion.

The boomerangs are also of two kinds—the returning and non-returning—and are sickle-shaped pieces of wood with certain cunning twists towards the ends. But whereas the returning one is little more than a plaything, the non-returning is a serious weapon of war and the chase. Up to a distance of a hundred yards and more, an aboriginal with a boomerang can be almost as accurate as a man with a rifle. The weapon is thrown from above the head and in its flight twists and swerves, making the dodging of it puzzling and difficult. In the same way, the aborigines can make the returning boomerang perform most wonderfully, even to causing it to come back to the very hand that threw it.

The aborigines are also adept at using boomerangs and woomeras for the deflecting of spears and other missiles in warfare; a slight twist of the hand holding the boomerang or woomera and the point of the flying spear is turned safely away from the body.

Character. The aborigines are often described as lazy and treacherous. Disinclined for steady labour they certainly are, but this is only in keeping with their nomadic instinct and age-old habit of living by the chase and what lies to hand. In their wild state, having captured their food and eaten it they see no further need for labour and accordingly do no more, until the need for food again arises.

In much the same way, their so-called



MODERN STONE SPEARHEADS
Made by the Worora tribe in the Kimberly Division,
Western Australia.
Photo: British Museum

treachery is chiefly the instinct of the hunter to make the most of the element of surprise. A great deal of their reputation for treachery arises from the fact that from time to time they have made surprise attacks on white settlers. But very often the attacks arose out of the settlers' invasion of aboriginal hunting grounds or infringement of tribal customs, all perhaps unwittingly. Frequently it began by settlers shooting kangaroos and other game on a native hunting ground, and the aborigines in revenge spearing cattle which the settlers pastured there. To protect their property, the settlers then drove off the aborigines, and in some cases shot them, with the result that the aborigines took the first opportunity of a surprise attack to even matters up.

It is the experience of those who have had such close and sympathetic contact as to be able properly to understand them that the Australian aborigines are a kindly, straightforward and honest people who make reliable friends. They have a great quality of affection, are extremely kind to their old people and to their children, and are capable of making great sacrifices for the benefit of others. The difficulty, however, is just this

matter of properly understanding them. White men only too often look down on them, and the aborigines in their contacts with whites withdraw within themselves accordingly so that their true nature is hidden. The picture that an aboriginal presents to another aboriginal is very different from the one he presents to a white man.

Tribal Organization. Family is the basis of the tribe, which has two main features—the Matriarchal and the Patriarchal. Some hold that the Matriarchal side governs questions of marriage, relationship, ceremonial, and blood-feuds and that the Patriarchal governs territorial matters, such as the limits of hunting grounds. Totems abound and are strictly respected, especially those pertaining to inter-totem marrying. There are no proper kings or chiefs; the ultimate authority is invested in a council of elders.

Rites and Ceremonies. Circumcision, the making of cicatrices, and the knocking out of an incisor tooth in young females are practised. Usually the tooth is knocked out by one of the elders placing a narrow stone against it and striking it with another stone, the girl, meanwhile, being held forcibly down on her back. Ceremonies of initiation into

manhood—known as “boras”—are conducted in some secluded spot, and few whites are said to have witnessed one. Before and during the ceremony much use is made of an instrument called a bullroarer—a piece of wood so whirled at the end of a string that a hole in the wood makes a loud roaring or humming sound. On hearing it, the women of the tribe run off and hide, the sound is believed to be the angry roaring of a great and much-to-be-feared spirit. Even to a white man there is something terrifying in the sound. The bullroarers themselves are held sacred.

Another ceremony, or celebration, is the corroboree, a kind of dance in which the whole tribe joins and in which there is much rhythmic leaping about, stamping of feet and brandishing of weapons. Feathers and other ornaments are worn, and the body is grotesquely painted, perhaps by outlining the ribs with white clay so that they stand out sharply against the black skin and give a skeleton-like effect. In the Northern Territory some tribes include in their corroborees a *pièce de résistance* such as a representation by two of the dancers of a fight between two animals—iguanas, for



ABORIGINES OF THE ARUNTA TRIBE PERFORMING THE CEREMONY OF THE SACRED POLE

Aborigines have no idols but possess at least some belief in a Great Spirit.

Photo: Government of South Australia

example—to the accompaniment of harsh notes blown on a flute-shaped instrument of bamboo.

Religion. The aborigines have no idols of any kind and are sometimes declared to have no religion. But it would seem they have at least some belief in a Great Spirit, also in a Sleeping Devil who one day will awake and devour the world. Belief in the power of sorcery is widespread and most mishaps are accredited to it. Almost always is a death put down to the machinations of a sorcerer or magician. Most tribes have a member who claims to be a magician—who declares himself able to cause rain to fall in time of drought, or to cease in time of flood,



MEN OF THE ARUNTA TRIBE MAKING UP FOR THE CORROBORREE CELEBRATION

Photo: Government of South Australia

and drive away misfortune and foretell where and when the hunting or fishing will be most propitious. Sometimes they are accused of causing the death of enemies by pointing a fragment of human bone in their direction and uttering certain words. This process of "bone-pointing" is used in many tribes.

Cannibalism. This is undoubtedly practised, but not to anything like the same extent as in Papua and other adjacent lands. Far-north Queensland aborigines, for example, express utter abhorrence of the very idea. When practised at all, it would seem to be more in the nature of ritual cannibalism than anything else.

Burial Customs. In some districts the dead are merely placed in shallow graves without coffins or wrapping and nothing even to mark the spot afterwards as a grave. In others, the dead body is wrapped in leaves and bark and kept by the relatives in their mai-mais and carried by them on their nomadic wanderings. In still other parts, the bodies are placed on platforms in the bush. Cremation is practised in some districts.

Mourning. The members of a tribe are very affectionately disposed to one another, and the death of one is followed by a long and deeply felt period of active mourning. The mourners cover themselves with clay and ashes and often cut their foreheads with shells or sharp stones, so that their blood mingles with the mourning clay. There is unceasing wailing, the voices of the women in a high falsetto, those of the men deep toned and guttural but now and again rising swiftly. The spectacle of a tribe mourning is most moving, and the sound of their wailing, particularly on a still night and beside the sea, over which the sound seems strangely to linger, one of the saddest imaginable. The mourning may be continued for several days and nights in succession.

Sexual Morality. Outside the totemic taboos, the aborigines' ideas of sexual morality are of a rather free order. A man will lend his wife to a visitor from another tribe, as a mark of respect or hospitality; and pre-nuptial promiscuity is common. It is held by some that abortion is practised and, by an operation on the male, a method of birth-prevention. The reason for these practices, if they exist, would be simply economic—the need to keep the tribal population within the food-producing limits of the district.

Language. There is great diversity of tongues, and it frequently happens that members of widely separated tribes cannot on meeting understand one another. The languages are direct, but with little provision for expression of abstract things, and in other ways so curiously limited that sometimes a particular condition or quality can be expressed only by its opposite. Thus, one northern tribe has a word for "hot" but none for "cold," so that if a man wishes to say he feels cold he can do so only by describing heat and its sensations and then saying he feels the opposite.

They have no writing, and their numerical system is limited, usually ranging only from 1 to 5—the number of the fingers. Sometimes the 5 is merely 3-and-2, and even the 4 2-and-2, thus reducing the basic numbers to two—1 and 2. After 5 a number is a "lot" or "great lot."

Smoke Signals. They have a strange fluency, however, in other means of communication. By means of columns of smoke used as signals they can send detailed information and messages over very long distances. They will tell of an accident, a birth, a forthcoming bora ceremony, the good fortune or otherwise of the day's hunting. They will tell of a death, together with the manner of it and the name of the deceased, and so rapidly will the news be

relayed by these smoke signals from one tribe to another that, maybe, a relative married into a tribe a hundred miles away will be mourning within the hour.

They can communicate very cleverly by gestures. These usually are made very rapidly, but the code is not difficult and with a little practice can easily be followed.

Art. While they have neither permanent dwellings nor any form of agriculture, the aborigines none-the-less have an art culture, and in many places are to be found their profile drawings of men and animals on rocks and the walls of caves. Primitive though these artistic efforts are, they frequently have a striking quality of life and movement. They make drawings, too, on ceremonial and fighting shields and other articles; in these cases the surface is usually covered with white clay or ochre and the drawings made in charcoal or some vegetable or mineral pigment, or the designs are carved out and the pigment rubbed in. On shields a grotesque or ferocious face sometimes occupies a prominent position. In other instances decorative designs of straight lines and curves are employed, with the white background used skilfully.

A Vanishing Race. As is shown by the census figures hereunder, the numbers of the

tion, but rather because of the aborigines' inability properly to adjust themselves and their ways of life to the new order. A proportion there are who have attached themselves more or less successfully to the new manner of life, becoming horsemen on cattle stations, police trackers (their innate bushcraft ren-



ABORIGINAL ROCK DRAWING

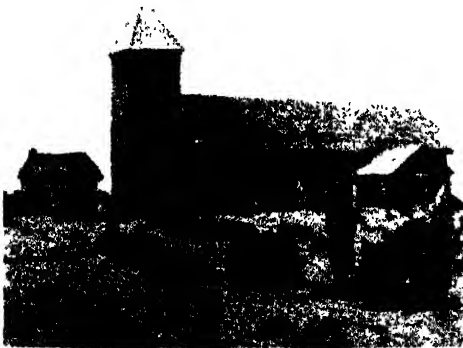
The primitive artistic efforts of this race often have a striking quality of life and movement.

Photo: Australasian National Travel Association

ders them extremely skilful in the tracking of criminals, or people lost in the bush), and in many other ways becoming useful members of the community. But for the race as a whole the change from the stone-age to modernity has been too abrupt.

Protective Measures. In various parts large areas are set apart as reserves for the aborigines, and there are also settlements where they are housed and taught and encouraged to work and their children given elementary schooling. One such is at Palm Island, off the Queensland coast. These reserves and settlements are controlled by special Boards, but mission stations also carry on the work, under the supervision of the Boards. Nomadic natives calling at such stations and settlements are given food and clothing. There are special regulations governing the employment and treatment of the aborigines. The expenditure from the Consolidated Revenue on protective measures for 1933-4 was £154,176.

Population. The number of the aborigines at the coming of the white man—say, at the beginning of the nineteenth century—has been variously estimated at about 150,000. This figure, however, can be little more than the roughest of estimates. Even to-day there is great difficulty in obtaining anything like an accurate count, because of the wild



MISSION STATION BUILT BY ABORIGINES

aborigines are decreasing. They are, in fact, a vanishing race; already they are long extinct in Tasmania. The coming of the white man and civilization are the agents of their downfall—not so much because of something inherently destructive in civiliza-

ABORIGINAL CENSUS
30TH JUNE, 1934

State or Territory	Nomadic	In Employ- ment	In Supervised Camps	Other	Total
New South Wales	129	145	547	187	1008
Victoria	2	17	31	3	53
Queensland	2430	2722	5561	1593	12,306
South Australia	1091	347	77	225	1740
Western Australia	16,469	3157	1761	1116	22,503
Tasmania	—	—	—	—	—
Northern Territory	11,427	2378	2768	665	17,238
Australia	31,548	8,766	10,745	3,769	54,848

and unapproachable nature of numbers of the natives. Although counts have been made from time to time, in the various States, it was not until 1924 that reliable figures were obtained for the whole continent. These gave a total of 62,415 full-blood aborigines. Figures for the following year, 1925, gave a total of 62,394, and those of 1926 a total of only 59,296. A census of 1934 shows still further how persistent is this decline in their numbers. See also AUSTRALIA, Vol. I.

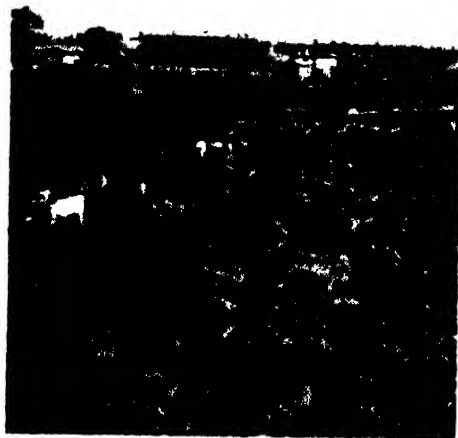
ADELAIDE. See article, Vol. I.

AGRICULTURAL AND PASTORAL INDUSTRIES. "The soil is desolate and sterile. There is no hope that it will ever grow sufficient food to maintain the settlement." That is recorded as the verdict of one of the officials of the first Australian settlement by the side of the Tank Stream, Sydney. In the failure of the soil to produce any indigenous crops to sustain civilized life, in the poor return which it gave to early tillage, there was much excuse for the pessimism. It may be recalled now when the range of Australian pastoral and farming production covers almost all the good things of the earth. The Australian soil and seasons, vastly different to those of the Old World, had to be understood before good results could be secured. With understanding came rich fruits for industry. To-day Australia with a population of a little under seven millions produces, on an average, £75,000,000 a year from agriculture, £39,500,000 from dairy farming, and £70,000,000 from pastures. In 1797 there were less than 5000 acres under cultivation; now there are more than 20,000,000 acres.

The stages of progress are interesting to note. By 1850 the area under cultivation was nearly 500,000 acres. Then the discovery of the gold fields was responsible first for a temporary check, then for a rapid advance. By 1858 the cultivated area had passed 1,000,000 acres. At the beginning of this

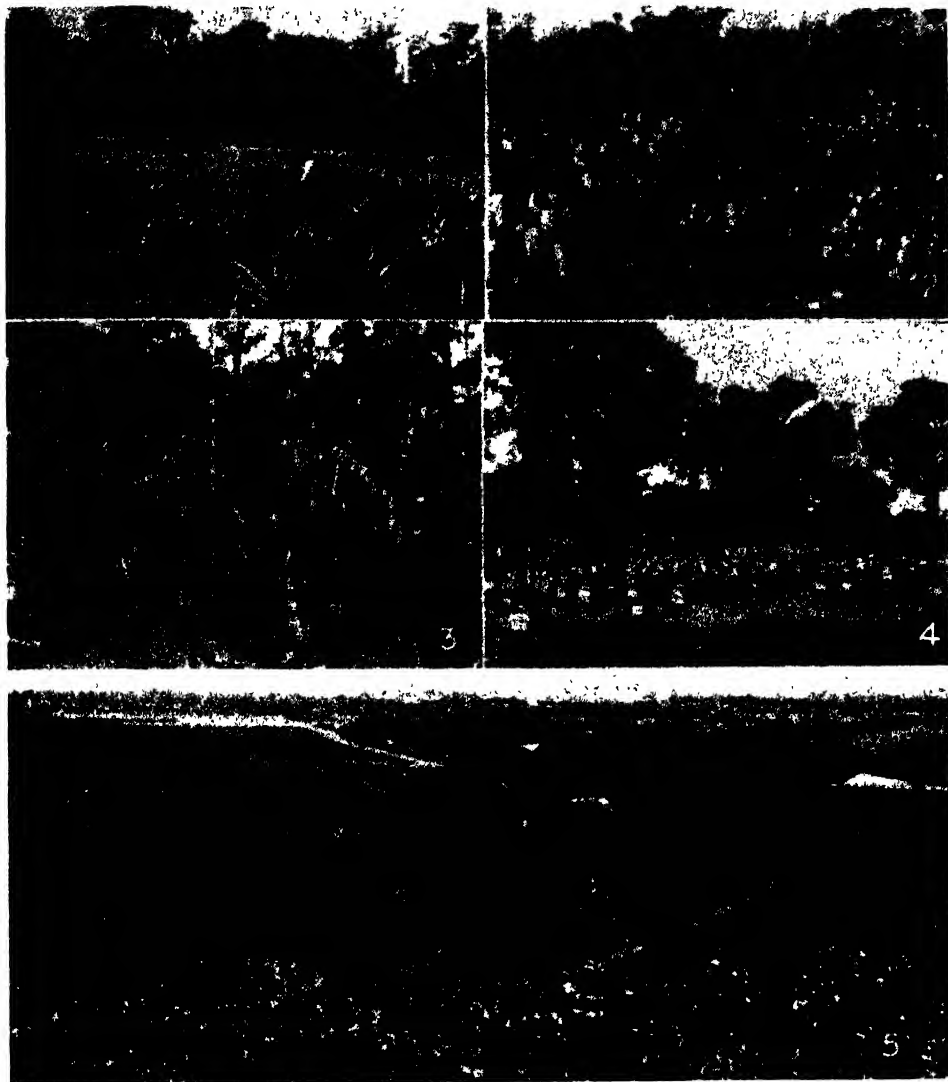
century it was over 8,000,000 acres, and thence steadily progressed to the present total.

Wheat is the chief farming crop, some 12,500,000 acres producing an average of 10-63 bushels to the acre. The abundance of land in Australia, the fact that it is easy



WHEAT AT A RAILWAY SIDING

and more economical to grow a thin crop over a large area than a full crop in a carefully tilled and fertilized paddock, has led to a method of wheat-growing which has since been extensively adopted in other parts of the world where farms are wide. The land is but poorly prepared in comparison with the thoroughly tilled fields of Great Britain. The seed is sown, often with no manure at all, sometimes with a little phosphate drilled in with the grain. Into the crop a stripper-and-harvester, a giant machine of Australian origin, is turned. This strips off the wheat, cleans and bags it in one operation, and leaves the straw standing. Into the stubble, sheep or cattle are turned, or it is burned



AGRICULTURAL ACTIVITIES

One of the officials of the first Australian settlement thought that the soil was so desolate and sterile that there was no hope that it would ever grow enough food for the settlement. But, as the peculiar conditions were realized, success was achieved. Now there are over 22,000,000 acres under cultivation and Australia with a population of 7,000,000, has an annual output from agriculture and farming valued at £180,000,000. 1. Pineapple plantation, Woombye, Queensland. 2. Cotton plantation at Wowan, Dawson Valley. 3. Banana plantation near Brisbane. 4. Apiary at Pewsey Vale, South Australia. 5. Vineyards on the foothills, Magill, five miles from Adelaide.

Photos: Agent-General for Queensland; Government of South Australia

off. It may seem unthrifty, this waste of the straw, but the method suits the climate and the conditions in most parts of Australia.

After wheat, oats, barley, and maize are the chief cereal crops, in that order. But almost every agricultural product is harvested in

some part of the continent; hops in Tasmania and Victoria; sugar cane and cotton in Queensland and New South Wales; tobacco in most of the States; and the full range of fruits is gathered, cold-climate berries, apples, pears, oranges, grapes, pineapples, mangoes and bananas.

Withal, agriculture in Australia is as yet only in its infancy. Intense cultivation is almost unknown and with so much good land available, areas which the thrifty European farmers would prize are despised.



DRYING RACKS FOR GRAPES
Photo Australian Trade Publicity

There is another class of land, extraordinarily rich but almost sterile now because of the rain conditions. That drought is such an obstacle to farming in Australia is not due always to lack of rain, but to the bad distribution of the rain which falls. Over an area as great as all Europe, excluding Russia, the average Australian rainfall is equal to that of England. But it comes in wholesale lots at intervals and leaves great stretches of dry weather in between. These conditions make good promise for irrigation. The sky gives the moisture if it can be conserved and utilized effectively. Some progress has been made. There were, in 1933, 693,000 acres under irrigation, chiefly in Victoria and New South Wales. In November, 1936, after seventeen years' work, there was completed the Hume dam of the River Murray irrigation scheme. It will store 34,000,000,000 gallons, irrigate many millions of acres, and at a comparatively small extra cost its capacity can be almost doubled. Even greater plans of irrigation await an increase of population. Irrigation, as a rule, means intense culture; and intense culture calls for populations handy to consume its products; or for wider world markets than are available in these days of stringent restriction of international trade.

In fact, at the present time the chief problem of Australian agriculture is to find outlets for its surplus products.

Dairy farming, as distinct from arable farming, is an important Australian indus-

try. In 1933 its total production was valued at £39,500,000 (in 1928 it was valued at £50,250,000). Falls in prices and international trade restrictions are responsible for the decline. Australian exports of dairy farm produce (chiefly butter to the British market) were valued at £10,089,000 (Australian Currency) in 1935-6.

Pastoral production contributes greatly to the wealth of the country. Wool-growing is the greatest single national industry. It is a legacy, in a sense, from England's "Farmer King" George III. In 1786 he secured from Spain a few of the famous merino sheep of that country. An infusion of merino blood into English breeds was designed by George III to get more fineness for English wool. His plan was a good and a patriotic one, and he entrusted the working of it to Sir Joseph Banks, the President of the Royal Society. It was in Australia that the perfect wool-sheep of which George III dreamed was to be evolved.

At the beginning of the nineteenth century the Australian flocks had their first humble origin. The rams which were first sent to Australia would yield about 3½ lb. of wool. A prize ram of first-class Australian stock to-day yields up to 40 lb. of fine wool, and the average yield of a good flock of sheep is 8 lb per animal. With this great increase in quantity, there has been even greater growth of quality. Australian merino wool



HORSE-BREAKING

Gone are the days when the "Water" com-manded great markets, but the Australian horse is still in some demand, especially for the Indian Army.

Photo Australian National Travel Association

to-day is finer, more lasting, longer in staple than any wool dreamed of a century ago, and its production makes possible the exquisite fabrics of to-day.

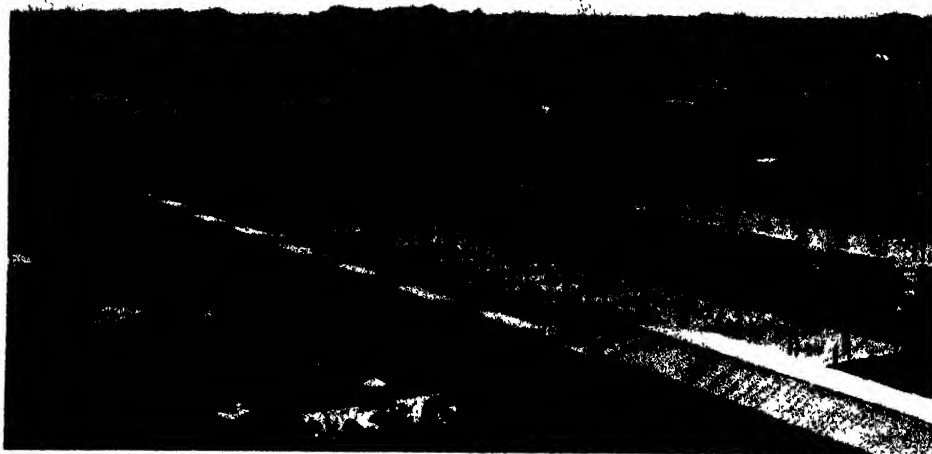
It was in 1803 that Captain John Macarthur reported to the Home Government on the excellent prospects for sheep



HARVESTING

Wheat is the chief crop (about twelve bushels to the acre are obtained on average), but almost every agricultural product is harvested in some part of the continent. However, agriculture in Australia is yet only in its infancy, intense cultivation being almost unknown. *Above:* Harvesting wheat on a mid-northern farm in South Australia. *Centre:* Stooking hay at Mitcham, five miles from Adelaide. *Below:* Stripping on Waldeck's Farm, Donyarra, Western Australia.

Photos: Government of South Australia; Agent-General for Western Australia



POULTRY FARM IN VICTORIA
Photo: Australian Trade Publicity

in New South Wales. He had already found that the descendants of imported sheep had fleeces of greater weight and finer quality than their parents. In 1804, King George III decided to distribute some of his merino stud sheep among the flockmasters of his Dominions and Captain Macarthur secured six lots. A hundred years afterwards Australia had over 70,000,000 sheep. The total since has increased to over 113,000,000 and the value of pastoral production (from these sheep chiefly, but from cattle in part) reached £127,301,000 in 1924-25. Since, there has been a decline, chiefly due to the world crisis, in primary production. In 1931-32 the value of pastoral production had fallen to £61,540,000. Lately, there has been a goodly increase. The Australian wool-growers faced the crisis bravely; no attempt was made to keep their wool off the world markets. It was sold for what it would bring, and, when times improved, there were no old stocks to cumber the markets. These figures of the average export price (to the nearest penny) realized by greasy Australian wool give in epitome the story of the crisis and the recovery: average price, five years 1924-28, 20d.; average price, 1932, 9d.; average price, 1934, 16d.

Wool, though the chief, is not the only pastoral product of Australia. The sheep also produce meat, and the continent has about 14,000,000 cattle, 1,750,000 horses, and 1,150,000 pigs. Exports of mutton and lamb (chiefly to the British market) earn about £4,500,000 per year. The market for horses is nowadays a dwindling one, owing to the development of the motor; gone are the days when the Australian horse, known

as the "Waler," commanded great markets, but it is still in some demand, especially for remounts for the Indian army. Cattle production has had recently a favourable impulse from the discovery of methods of exporting beef in a chilled instead of a frozen state. Australian cattle-rearing was at its nadir in 1914; rose steeply until 1921, then declined until 1929; now is again on the up-grade. Beef exports in 1935-6 were valued at nearly A£2,500,000.

Soil—Climate. The area of the Australian Commonwealth, including Tasmania and some smaller islands, is about 2,974,581 sq. miles. Of this nearly 40 per cent lies within the tropics. The Northern Territory is chiefly tropical, Queensland rather more than half tropical, Western Australia about one-third tropical. The continental area may be roughly classified into a coastal strip with rainfall varying from very abundant in the north to ample in the south; a tableland with generally good rainfall; and interior plains, on which the rainfall is from scanty to very scanty. The soil of the coastal strip and of the tableland is usually good; in the interior there is a great area of very rich soil—the Black Soil Plains—generally with insufficient rainfall for arable cultivation unless irrigated; and another great area of "desert" country, part of which has a strictly limited usefulness for pastoral purposes as it has supplies of artesian water (fed from rainfall in the coastal areas) which can be tapped at depths ranging from 10 ft. to 6000 ft. Tasmania, the island State of the Commonwealth, has an equable, temperate climate, good rainfall, and areas of excellent soil, interspersed with mountainous country.

The Queensland coast and the northern section of the New South Wales coast are given up to tropical and sub-tropical crops—sugar, bananas, and dairy farming. Grain crops, fruit crops and dairy farms predominate in the rest of the coastal area and on the tableland. Sheep farming is the main occupation of the inland plains—though much wheat is also produced there under the methods of "dry farming." Cattle raising is the industry of the further inland—"The Back of Beyond" as the Australians call it—and of the Northern Territory. Cattle runs can be carried on in extremely hot country, and beyond the range of the railways, the animals travelling on the hoof to the rail-head or coast.

Cattle-raising has never reached in Australia to the financial dignity of sheep-farming, but with it is associated much of the romance of the young nation. A typical cattle-station in the Northern Territory or in the remoter parts of Queensland, is cut right away from civilization. There is no shearing season; to bring at regular times a nomad band of workers. A little, very little, group of white men will occupy a homestead. A tiny milking herd, a small breeding herd, will be under some close control. The rest

of the cattle will run absolutely wild once the young ones are branded.

It was at first considered impossible to cultivate sugar on the tropical north coast with white labour, and Kanakas were imported as indentured workers from the South Sea Islands. Since the beginning of this century this has been stopped, and sugar-growing is now a "white" industry, with over 300,000 acres under cultivation.

Land Tenure. The general policy of Australia is to encourage close settlement, but the soil and climatic conditions in a great part of its area make this impossible. Roughly 40 per cent of the continent is as yet unoccupied, or held by the Crown; a further 50 per cent is held under lease or licence, mainly for pastoral purposes and in large areas; the remaining 10 per cent has been sold, or is in process of sale, to private owners. This 10 per cent includes practically all the farmed land; and yet a considerable part of it is taken up by pastoralists, a proportion of many sheep runs being the freehold property of the "squatters" (an Australian term for pastoralists). The number of persons holding properties from 50 to 50,000 acres is about 200,000, and there are 70 individuals each holding more than



AN AUSTRALIAN ROUND-UP

Cattle production has had a favourable impulse from the discovery of methods of exporting beef in a chilled instead of a frozen state. Beef exports in 1933 were valued at nearly £3,000,000.

Photo: Australian National Travel Association

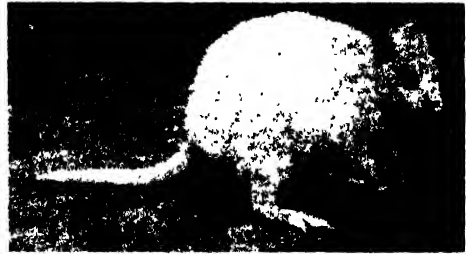
50,000 acres. (These figures exclude Queensland and the Northern Territory.)

In each of the Australian States there is a Lands Department under a responsible Cabinet Minister to deal with the alienation and management of the public estate. Land may be acquired by free grant (for public or charitable purposes), by unconditional purchase, by purchase under varying conditions of residence, cultivation, etc. It would be impossible (and of no utility) to attempt to detail all the methods by which land can be acquired or leased from the Crown in the various Australian States. They range from snow leases in the Alpine district to "prickly-pear leases" in Queensland, the latter being for land which has been infested with prickly-pear and is useless until the pest has been exterminated. Land with good soil and rainfall near to the coast, or to the railways, is by no means to be cheaply obtained, but the various State governments help closer settlement generally by liberal credits. "Group" settlements have been experimented with as a means of increasing the small farmer population, not always with successful results, chiefly, perhaps, owing to the fact that they were usually "one-crop" settlements, and found difficulty in marketing that crop. The best hope for the future of Australian closer settlement is probably in the foundation of "mixed farming" settlements, aiming to produce (and to consume) the greater part of the necessities of existence. See also AUSTRALIA, Vol. I.

ANIMAL LIFE. When Alfred Russell Wallace, a contemporary of Darwin, drew the famous "Wallace Line" separating the animal life of Asia from that of Australia, he stressed its importance to naturalists primarily because Australia has so long been separated from the rest of the world that its animal life had existed with a great deal more independence of foreign immigration than most other lands. Thus some of Nature's strangest experiments were allowed to linger on even to the present day—the egg-laying duckbill platypus and the echidna, the kangaroo, and the strange koala. Man's contribution to the animal life of the great southern continent has been chiefly the rabbit, the dingo or feral dog, and the rat. He has contributed a considerable number of British song birds, like the starling, house-sparrow, song-thrush, blackbird, and the goldfinch, which have competed severely with the native birdlife.

Let us consider some of Australia's peculiar fauna. Foremost are the kangaroos, long-legged marsupials confined to the continent, but now they are growing scarcer and though once hunted, they may yet have

to be protected from extermination. They are probably the world's longest jumpers, and a Western Australian kangaroo was measured to cover over 150 ft. in five hops, the hops ranging from 29 ft. 3 in. to 31 ft. 9 in., while one over a deep watercourse was 38 ft.; 35 m.p.h. is not an uncommon speed for the kangaroo when fleeing from its foes by this means. Much more interesting, but less known, is the birth of the kangaroo studied in recent years at Sydney Zoo. Most people know the younger kangaroo is carried in the mother's pouch until able to shift for itself, but when this baby is actually born, it looks no bigger than an inch-long maggot. This little, blind, flesh-pink baby struggles over the mother's fur to find its way to her pouch and the milk-giving teats within. Usually it takes the newborn babe



ALBINO BENNETT'S WALLABY

Photo: E. J. Hoshing

half an hour or so to reach the pouch, without any help from its mother. Eventually, if successful, this maggot-like youngster will grow to a weight of some 200 lb. and a length of some 5 ft. After living on milk for some months, and later on vegetation, the young leave their parents' pouches to form their own troops. Twins are rare.

The biggest kangaroo is the Woodward's, but one of the commonest is the great grey kangaroo of Australia and Tasmania. The red kangaroo, so commonly seen at zoos, dwells in rocky places, while the large, red-necked wallaby (the wallabies are a group of kangaroos) lives in Queensland, New South Wales, and Tasmania. For a long time kangaroos have been hunted by the farmers because of the damage they do to crops, just as the emus, the big, flightless relatives of the ostrich, are hunted and shot because of the damage they do. During the heat of the day, troops of kangaroos lie up in shelter, feeding mostly at night or in the mornings and evenings; sitting on the tripod of their hind legs and tail, they can scan a wide countryside. In the pairing season of January and February the males fight frequently amongst themselves. A good swimmer, the kangaroo has been reported



SOME AUSTRALIAN ANIMALS

Australia has so long been separated from the rest of the world that its animal life has had a much greater independence of foreign immigration than has that of other lands. Some of Nature's strangest experiments have lingered even to to-day. 1. Tree climbing Kangaroo. 2. Koala, which lives in trees and is abroad chiefly at night. 3. Ant hill in Northern Australia. 4. Opossum. 5. Kangaroo. These animals are the world's best long jumpers. 6. Duckbill Platypus; a mammal which lays eggs. 7. Tasmanian Devil; one of the marsupials. 8. Lizard. There are numerous reptiles. 9. Kookaburra or Laughing Jackass. 10. Jerboa; a rodent. 11. Kangaroo with young.

Government of New South Wales; Australian National Travel Association; Cherry Kearton



LAND TORTOISES

Photo Australian Trade Publvsty

swimming two miles out to sea when hunted. See KANGAROO; WALLABY.

The little koala, which has gained so much notoriety because of its resemblance to the nursery Teddy Bear, is not a true bear, but is related to the kangaroo in that it is a marsupial. This little fellow was never abundant in the continent, but inhabited the eucalyptus forests of the east and some years ago nearly became extinct, but the efforts of Australian nature lovers, including Mr. Noel Burnet, who formed a sanctuary at Sydney, have done much to increase their numbers again. About 2 ft. long, tailless, but with large, square, thickly-fringed ears which it has a comical habit of frequently adjusting with its forepaws, a coat of thick, woolly, soft brownish-grey fur, and a large, naked nose, the koala lives chiefly in the trees, using its long claws for a sloth-like progress, upside down, along the branches. It is practically helpless on the ground and is abroad chiefly at night, sleeping the day in some hollow. Feeding on leaves, shoots, or roots, chiefly of eucalyptus, its disappearance from many old haunts is obviously due to the destruction of the forests. Experiments at the Koala Park, Sydney, have shown only twenty out of some six hundred species of eucalyptus are suitable for food for the koala. The Victoria race of koalas is much darker, with longer and fuller coat and more robust appearance than the Queensland variety. See KOALA.

At the very end of the group of mammals or hairy, four-legged animals, separated into a special order of their own, the *Monotremata*, we find the Australia duckbill platypus and the echidna, curious mammals which upset all the rules of mammal life in that instead of giving birth to living young, they lay eggs. They are really more closely related to some extinct reptiles and amphibians than to birds. The duckbill, nearly 20 in. long with its muzzle flattened and

expanded into a black, duck-like beak, so that it can feed on small aquatic life, is confined to south and east Australia, and Tasmania. A shy creature of the night, it usually lives in pairs in burrows by the water, and in these burrows (up to 50 ft. into the bank) two eggs with a strong but flexible shell and measuring $\frac{1}{4}$ in. long are laid on a bed of grass. The eggs hatch into blind, naked young whose soft beaks enable them to feed on the milk of their mother, a characteristic mammal habit. Because of their aquatic life, their fur is dense and close, there are no external ears, the front feet are broad and webbed for swimming, and the nostrils are at the end of the beak. The male has a short, backward curving spur on the outer side of each hind foot which is connected with glands which exude venom. The duckbill does not appear to use its spurs as weapons of offence. See DUCKBILL.

The other egg-layer, the echidna or spiny-ant-eater, of which there are two species, at first glance resembles a long-nosed hedgehog, for its upper coat is a mixture of stiff hairs and thick short spines, and the head has a long, slender, beak-like snout, covered with skin and with the nostrils at the end. The body is very broad and depressed, the smaller species (of New Guinea) being 14 in., and the larger species (of Tasmania) 19 in. long; there are no external ears, only a mere stump of a tail, but the feet have very long claws. Nocturnal dwellers of rocky districts, the echidnas feed on ants, but little is known of their breeding beyond their laying two

ALBINO ECHIDNA
(Spiny-ant-eater)

Egg layer and nocturnal dweller in rocky places.

Australian National Travel Association

**SOME AUSTRALIAN BIRDS**

1. A fine young specimen of the Australian wedge-tailed eagle. 2. Lyre bird, famous for its powers of mimicry. 3. The Bower bird's bower which is erected both as a playground and as an aid to courting. 4. Broilga (or native companion). 5. Emu. Its small wings are useless for flight: the feathers have no commercial value. 6. The largest and the smallest of Australia's cockatoos.

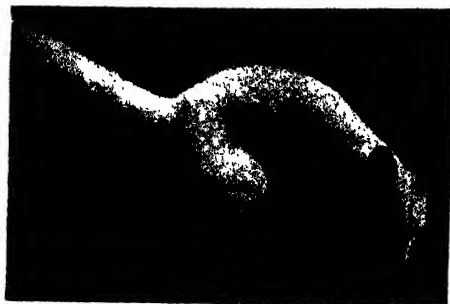
Photos: Agent-General for Queensland; Australian National Travel Association, Government of New South Wales; Cherry Kearton

eggs which hatch in May, the Australian winter. See **ECHIDNA**.

The dingo, a curious yellow-tinted wild dog of Australia, not unlike a dusky-red and yellow alsatian, is the mystery of the continent, in that naturalists cannot all agree if it is a native or a feral, that is, escaped animal gone wild. Found in all parts but especially the south, it lives on the plains, and in many ways is similar to the wild dogs of India and Malay, but the finding of dingo bones in Pleistocene remains throws doubt on the suggestion that it arrived with Malay explorers. Most of the animals are now

crossbreeds with European dogs, and the pure-bred dingo is becoming rare. See **DINGO**.

Birdlife in Australia also has its interests, best-known to Europeans is the black swan, so often kept on ornamental waters in England, where it frequently has two nesting seasons, one its native one in the northern winter, and the other in summer. The kookaburra, known as the laughing jackass, which is famous for its laugh-like call, feeds on rats, lizards, and crabs. The lyre bird, named from its tail, is one of the best song birds, while the bower bird is noted for its



ALBINO OPOSSUM

Photo: Australian National Travel Association

WOMBAT AND YOUNG AT THE MOUTH OF
THEIR LAIR

Wombats are large, nocturnal vegetarians.

Photo: Government of New South Wales

courtship "bower." See BOWER BIRD; KOOKABURRA; LYRE BIRD; SWAN.

Bats and mice are the only types of native wild life similar to Old World forms, excepting the seals and dugongs on the shores. There are large fruit-eating bats and small insect-eating species, while curious rodents include the long-legged jerboa, and kangaroo-mice, and the mosaic-tailed rats, the scales on whose tails are set on edge. The opossums and marsupials are the most interesting to naturalists. The marsupials include the flying phalangers which, by folds of skin which spread out when the limbs are extended, can prolong their leaps from tree to tree over great distances; the wombats, large, nocturnal vegetarians with short legs and short flat heads; the Tasmanian devil and the Thylacine or Tasmanian wolf. Though wolf-like creatures, they are marsupials or pouched animals. When pursued over a great distance the Tasmanian wolf

has been reported to increase its speed by means of kangaroo-like hops.

Of bird forms, warblers, thrushes, flycatchers, shrikes, and crows of the Old World are represented, but most other groups are missing. The finches are represented by the weaver-finches. Many Australian finches, like the zebra, firetail, and gouldians, are well known in European aviaries. There are no native vultures, woodpeckers, or pheasants, but there is the interesting brush-turkey or mound bird, which hatches its eggs in a large incubator or mound of vegetation, generating its heat like a compost heap. There are many parrots, cockatoos, and pigeons. Reptiles are abundant. There are 34 non-venomous and 105 venomous snakes, twenty of which are the sea-snakes, paddle-tailed inhabitants of the warm seas of the rocky coasts. The largest snake is the 21 ft. north Queensland python, the largest venomous one, the giant brown snake of north Australia which attains up to 12 ft. The most deadly is the death or deaf adder, 50 per cent of its bitings proving fatal; next is the tiger snake, then the brown snake. There are many skinks and geckoes (lizards), few toads, but tree-frogs are numerous. There are relatively few native fishes, the most interesting being the lung-fishes of Queensland, able to survive the droughts in the hard muddy bottoms of rivers. There is one native crocodile. Of insects, the butterflies, of which there are over 300 species, are most interesting. Most of these, however, are found within 50 miles of the coast and few are in the interior. The Great Barrier Reef, of coral, is a wonderful haunt of invertebrate life, famous for its giant clam.

Most of the animals in Australia common to other parts of the world have been intro-

BAILER SHELL SPAWN WITH YOUNG
BAILERS HATCHING

Photographed on the Great Barrier Reef.

Photo: Agent-General for Queensland

duced by man. Noteworthy examples are the rabbit, hare, cat, black rat, common mouse, fox, house-sparrow, and starling,



ELEPHANT BEETLES FIGHTING
Each beetle is as big as the palm of
a man's hand.

Photo. Australian National Travel Association

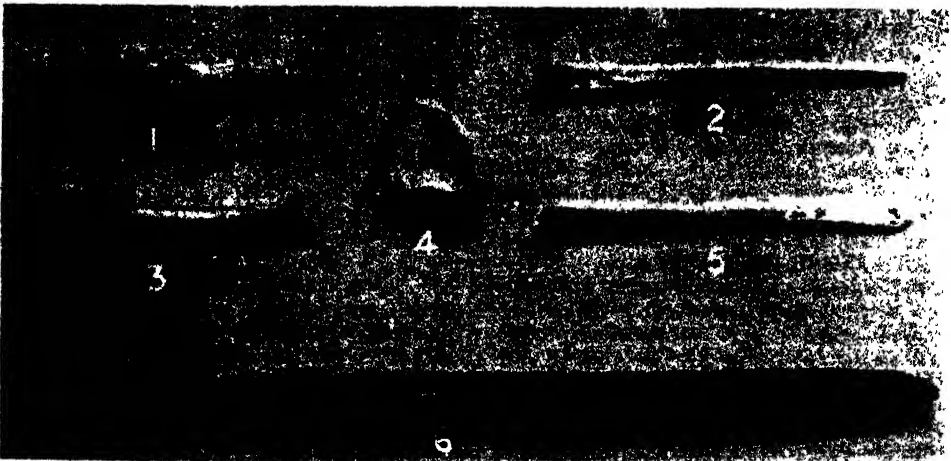
which have increased far beyond the numbers of the native species.

There are separate articles on most of the animals, birds, etc., mentioned.

ARCHAEOLOGY. Australia, the most ancient of lands, is also from the point of view of archaeologists a land of paradox. It was, until within modern times, inhabited exclusively by the oldest and, from some aspects, the most primitive of the races of mankind; yet it has contributed less direct proof of man's antiquity than any other continent. Although the aboriginal appears to have lived in Australia from immemorial ages, isolated and few in numbers, he yet, in the remoter parts, employs to this day implements which cover almost the entire range of those representing the various stages

of European pre-nistory. We are dealing with a Stone Age people whose flints are palaeolithic and whose axes are neolithic. Here was no bronze or iron age till little over a hundred years ago, and when we speak of Australian archaeology we can only mean aboriginal. Yet if we hold archaeology to its severer application, as being the study of the material remains of antiquity, we are forced to admit there are very few. This is obviously explainable by the fact that here as elsewhere a Stone Age people can leave nothing behind it but stone implements, bones, and cave drawings or petroglyphs. The aboriginal has no pottery, no metals, no agriculture, and no architecture. If we consider archaeology in its wider sense, however, then there is no land more important than Australia for the study of pre-history, and this despite the fact that human remains and tools are not found in other than superficial deposits (A skull in Queensland, a kitchen midden near Sydney, a stone tool near Maryborough, Victoria, seem to be the greatest possible evidences of his antiquity.) But in its aboriginal population Australia is a living museum. Knowledge of the European Stone Man has been considerably aided by the observation, still possible, of the blackfellow and his social organization.

It is not known with any certainty when or how the aboriginal came into Australia, but it seems likely that the Tasmanian travelled down the eastern coast, and that the Australian entered by the north-west. The Tasmanian, now extinct, was a negro.



**MODERN TOOLS USED IN MAKING FINE STONE SPEAR HEADS BY THE WORORA TRIBE,
KIMBERLEY DIVISION, WESTERN AUSTRALIA**

1 and 3. Kangaroo bones for the second stage of pressure flaking. 2 and 5. Kangaroo bones for final trimming to produce serrated edges. 4. Stone hammer for rough shaping by percussion. 6. Stick for first stage of pressure flaking.

Photo: British Museum

The Australian is a dark-skinned Caucasian of pre-Dravidian type. The Tasmanians never progressed beyond an early palaeolithic stage, and we know nothing of their social organization and possess only a few of their implements and other remains. The discoveries in the Glenelg river valley have been thought to indicate the existence in Australia of a more advanced race than the aboriginal; but it is by no means certain that the blackfellow is incapable, as asserted, of having executed those works (consisting of life-size paintings in red, blue, and yellow of human figures; rough sculptures; and mounds of loose stones in perfect parallelograms). If one considers the bark-drawings, both realistic and unconventional, now in the National Museum at Melbourne, the perfect workmanship and ingenuity of many aboriginal tools and weapons, the remarkable geometrical designs of the Central tribes—then there is no reason to attribute to another race things the Australian may well have executed. It has been said that the superstitious aboriginal has never lived in caves (which, incidentally, have been the source of mystery and myth to other races than his), but Sir Baldwin Spencer describes caves along the Alligator River whose roofs and sides are a mass of paintings blackened through long years by countless fires. Most native rock paintings are done in charcoal, pipe clay, or ochre (as in all Stone Age caverns), and are geometrical or represent either conventionalized animals or, more rarely, plants. The "red hand" drawing found over all Australia is said by Spencer to have no occult significance, but to be the simple outline in powdered ochre of the hand. Of even greater interest are the sacred stones, the Churinga, a term applied to the bull-roarer, but also to anything associated with the totemic ancestors. There are storehouses which contain Churinga, many of which are of great antiquity, the carving on them completely worn down by age-long handling. Other Churinga are elaborately decorated in spiral and circle. The ground stone-tools are made of diorite, native quarries of which are found in the MacDonnell Ranges; the flaked and chipped tools are of quartzite, which besides being easy to work is also widely distributed. On Wilson's Promontory, Victoria, thousands of these flakes have been found in the kitchen middens of the sand dunes, and at Renner's Springs in the Warramunga country there is a quarry of quartzite which has been worked for many generations.

ARMY, AUSTRALIAN. See article **ARMY**, Vol. I.

ART. Various minor artists visited or settled in Australia during the early years;

and one important artist, the etcher Meryon, made sketches there, 1842-46. But Australian art may be said to begin with Conrad Martens, a pupil of Copley Fielding, who had a pleasant sense of colour and composition, but imported low tones and preconceived designs that did not catch the character of the scenes he painted. J. S. Prout (1840-50)



DIANA
Sir Bertram Mackennell
(Tate Gallery)

first caught something of the Australian glow.

The growing wealth of the settlers, especially after the discovery of gold, drew out various sculptors and painters of portraits, who, at least, introduced a certain standard of competency; but it was in the work of a Swiss, A. L. Buvelot, that an indigenous art may be claimed to have taken root. For Buvelot's influence led to the first school of genuine national art, the work of men like Streeton, Roberts, Paterson, Withers, McCubbin. These men first expressed on their canvases a real impact of Australian

life and conditions with something like fullness. Partly they achieved this by choice of subject—titles such as "Rounding up the Stragglers" (Frank Mahony), "Golden Fleece" (Roberts), "A Bush Burial" (McCubbin), "Across the Blacksoil Plains" (Lambert) show this aspect. Partly they showed their nationality in subtler ways, seeking to catch the essence of Australian landscape, its spaciousness, its peculiar forms of gully or saltbush plain, its gum trees, its blue distances and penetrating light.

The new school first aroused public attention when Roberts, Conder, and Streeton held in August, 1889, the "Exhibition of 9 x 5 Impressions" (9 in. x 5 in. being the size of the cigar-box lids on which they had painted). The leading spirit was Roberts, who had visited Europe and seen the work of the French Impressionists. The chief artist that came from this movement was Arthur Streeton, whose earlier (and best) work was naturalistic rather than impressionist in technique, but was thoroughly *plein air*, filled with a joyous sunniness, a true interpretation of such scenes as the smiling Hawkesbury valleys. These paintings were unmistakably Australia, and Australia at its happiest.

Pen-and-ink work developed strongly from the 'eighties onwards, stimulated by the work of Phil May in the *Bulletin*. The main figures that have come from this important area of Australian art are Norman Lindsay, David Low (born in New Zealand), and Will Dyson; their most obvious qualities are boldness of design and characterization.

Painting had reached maturity with Streeton, and there has been no lack ever since of capable portrait painters and landscapists. Here there is space only to mention the four outstanding figures who typify the chief developments. George Lambert was the finest technician in paint that Australia has produced; but his period in Europe, while bringing his skill to an admirable level, deflated his art of the original character it had possessed when he painted way-back scenes in his youth.

In landscape, J. J. Hilder, Hans Heysen, and Elioth Gruner advanced considerably into a deeper perception of the moods and typical effects of the Australian scene. Hilder, working in water-colour, expressed the richer aspects with dazzling colour-washes. Heysen, a well-endowed artist, revealed, with a mixture of solidity and easy grace, such scenes as that of a clump of big gums floating in mist. Gruner tackled directly the problems of Australian light, looking straight towards the sun and painting the crystal depths of the early morning.

One development of the black-and-white tradition must be mentioned: that of etching, which has grown in importance since the first show in 1921, at Sydney, of the Society of Painter-Etchers. J. Shirlow, Lionel Lindsay (at his best in woodcuts), and Sydney Ure Smith, were the founders of Australian etching; and the most impressive work in that line has been done by Norman Lindsay, who, by original stippling methods, produced luxurious chiaroscuro



THE CRITIC
Charles Webb Gilbert
(Tate Gallery)

effects. This artist's work falls into two periods, the earlier pre-war being realistic at basis, the later being concerned with textural delicacy, at the expense of draughtsmanship.

In sculpture Australia was given a good start by the visit of Woolner (1852-54) and the residence of Viollet-le-Duc during the 'seventies; but the best-known Australian sculptor, Sir Bertram Mackennal, achieved his reputation in England, and though others such as H. Parker and Webb Gilbert have done effective work, sculpture has not entered into the national life as landscape painting and black-and-white have done.

ARTHUR, SIR GEORGE (1784-1854). A governor of Tasmania. After a career as a soldier he was appointed, in 1823, Lieu-



SIR GEORGE ARTHUR
Photo: Fox

tenant-Governor of Tasmania. He quickly gained a reputation for despotism, but during his twelve years of office, commerce prospered, and order was established. He segregated the worst of the convicts on Tasmania Peninsula, and also segregated the aborigines. Later he was made Governor-General of Upper Canada and Governor of Bombay.

AUSTRALIAN TERRIER. See article, Vol. I.

BALLARAT. A city of Victoria 74 miles from Melbourne, situated on what was once the richest alluvial gold field in the world. Although the gold production is now comparatively small, Ballarat maintains its position as one of the most important cities of Australia in virtue of its large number of industries, which include textile and engineering works. Ballarat has a population of 37,850 (1934).

BANDICOOT. See article, Vol. I.

BANKING AND FINANCE I.
BANKING. Trading Banks. (a) *Trading Banks till 1850.*

A brief history of Australian commercial banks is best divided into three periods, viz.: 1817-50, 1850-93, 1893 onward.

In the first period—a time of purely agricultural settlement—eighteen banks were established. Only four of them are still in existence to-day, eight having failed, six having been absorbed. The first of these banks was the Bank of New South Wales, founded in Sydney on 8th April, 1817, to-day Australia's biggest commercial-bank.

In 1850 ten banks were still in existence. They had a paid up capital of £3,000,000, the greater part of which came from England.

(b) *Trading Banks, 1850-93.* The most important events in the economic sphere during the second period of Australian banking are the discoveries of gold in New South Wales

and in Victoria in the 'fifties, a great increase of population, the development of big towns and of secondary industries. During the second part of this period (1870-89), Australia experienced a great land and building boom. This boom ended with the severe crisis of 1893. In this period thirty-three new banks were established, eight between 1850-58 (gold banks), twelve between 1863-73, thirteen between 1877-88. But twenty of these new banks disappeared again, seventeen of them by 1893. Between 1871-93 deposits increased from £25,000,000 to £153,000,000. The branch bank system was developed during this time. In consequence of the Baring crisis in London, 1890, the influx of cheap English capital into Australia ceased, the high values of land fell, and in 1891-92 forty-one mortgage, land speculation and building societies failed with a loss of £25,000,000.

The situation of many banks became precarious. They had advanced large amounts of their deposits to these companies which had used them, together with capital raised directly in Great Britain, for buying building land at very high prices. In the decade 1881-91, advances of banks increased by



BALLARAT
An old gold mining centre and the second largest city of Victoria.

Photo: Australian National Travel Association

£81,000,000, deposits merely by £56,000,000. In 1889 the ratio between advances and deposits was dangerously high. To aggravate the position, prices of wool and wheat had fallen 25 per cent from 1891 to 1893, causing losses of advances made against these commodities. Between January and May, 1893, fifteen banks closed, involving



SYDNEY FROM THE AIR

The oldest city and chief naval station of Australia, Sydney is an important manufacturing centre and the clearing house for half Australia's trade. The first agricultural bank was founded here in 1817. There are more than twenty-three miles of wharves and quays.

Photo. Government of New South Wales

deposits of £87,000,000. Twelve re-opened with sharply reduced assets, heavily indebted to their depositors. Only twenty-six banks with a paid up capital of £17,000,000 and £8.8 million reserves survived the crisis, the total losses of which were estimated to be about £133,000,000.

(c) *Trading Banks*, 1894 onward. In this period Australia's agriculture, trade, and especially industries, made steady progress. Large amounts of foreign capital helped to develop the growing economic activities of the States and (since 1900) of the Commonwealth of Australia. The banks financed exports and imports and the loan operations. Every increase of exports or foreign loans strengthened their funds accumulated in London. Australia paid her imports, interests on foreign loans, and her other international commitments from these London balances.

Her exports were seriously hit by the world economic crisis. From 1933, however, signs of recovery appeared as fruits of the Australian crisis policy and the improvement in world trade. In the two years (1935-36) Australia has made progress towards a new prosperity. The trade banks have shown a remarkable strength throughout the whole period. The increasing demands

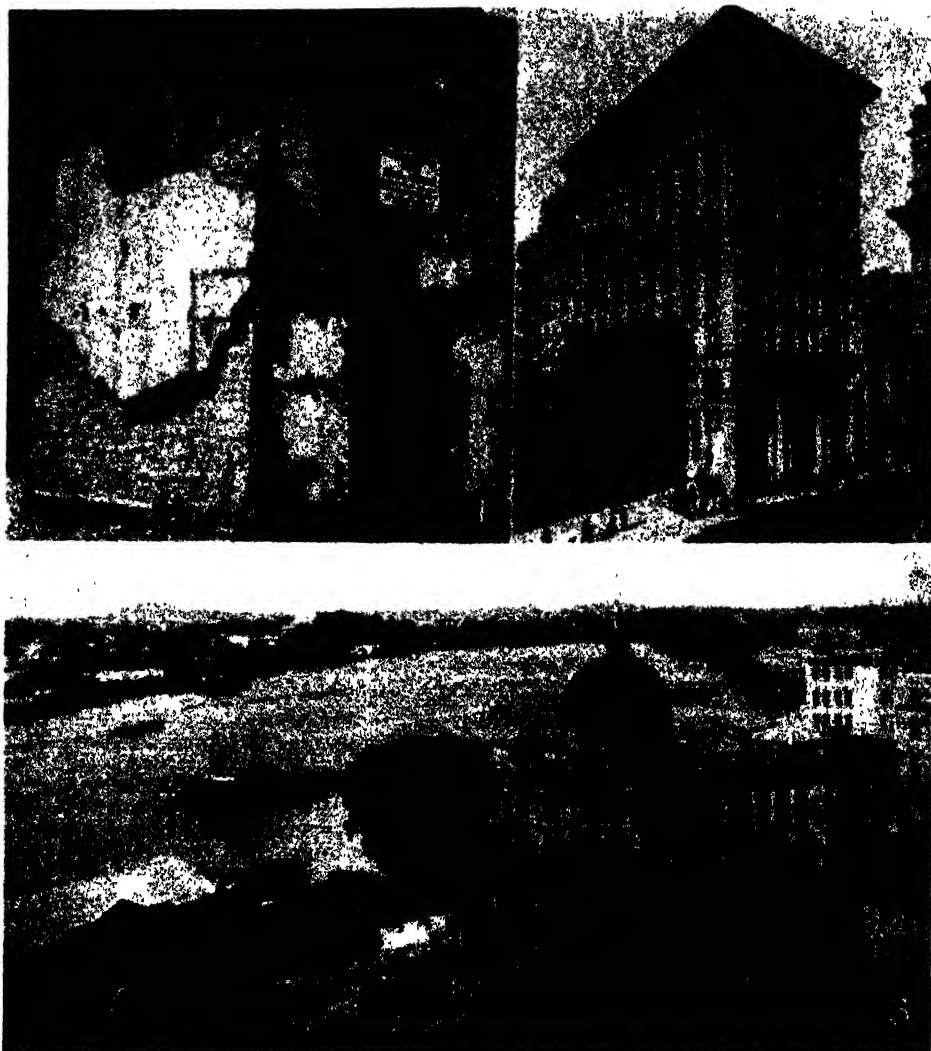
of growing trade and industry caused the banks to increase their capital by amalgamations. About nineteen banks were combined with others, thirteen of them between 1917 and 1932. In 1930, sixteen trading banks were operating in Australia; in 1934, thirteen. (Foreign banks with offices in Australia excluded.) Two banks only failed during the crisis. Paid up capital and reserves grew quickly.

In the last period of Australian banking branches were opened in all parts of Australia. In 1900 there were 1200 branches, in 1910 about 2300, in 1930 nearly 4000.

Savings Banks. In the first half of the

THE SEVEN BIGGEST JOINT STOCK BANKS OF AUSTRALIA TO-DAY (30TH JUNE, 1934)

Name of Bank	Paid up Capital	Reserve	Founded
	(mill. £)	(mill. £)	
Bank of New South Wales	8 78	6 15	1817
National Bank of Australia	3 00	3 30	1857
Commercial Banking Company of Sydney	4 74	4 30	1834
Bank of Australasia	4 50	4 47	1835
Commercial Bank of Australia	4 12	8 25	1866
Union Bank of Australia	4 00	4 85	1837
English, Scottish, and Australian Bank	3 00	3 22	1851



BANKING AND FINANCE

Banking falls into three periods: the first was that of agricultural settlement between 1817 and 1850, the second followed the discovery of gold and lasted till the crisis of 1893 (caused by failure of land speculation and building societies following heavy falls in the prices for wheat and wool). Since the third began in 1894, agriculture, trade and industry have made steady progress and trading banks have become well established. 1. Remains of the strongroom of the Bank of Victoria at Walhalla through which during the boom passed 72 tons of gold. 2. Commonwealth Bank, St. Martin's Place, Sydney, the central bank of Australia. 3. City Reach and the Customs House at Brisbane.

Photos: Agent-General for Queensland; Australian National Travel Association; Topical

nineteenth century savings banks were established in several States. (First savings banks, 1819, in Sydney and New South Wales; 1842, in Victoria; 1848, in South Australia.) Since 1865 post office savings banks were opened. About 1870 savings banks were to be found in all States.

Since 1900 the savings banks have become

a very important resource of capital accumulation. Their deposits showed a remarkable increase till 1929. In the following two years they were reduced, but since 1932 they have been again rising and, in 1936, they reached nearly the figure of 1929, which is the highest ever recorded in the history of Australian savings banks.

DEPOSITS OF AUSTRALIAN SAVINGS BANKS
1901-36

Year	Total Deposits (million £)	Per Head of Population
		£ s. d.
1901	30.9	32 0 4
1910	53.1	35 16 1
1920	137.0	25 16 8
1929	225.0	35 7 7
1931	193.0	29 12 6
1935	218.0	32 8 3
1936	225.0	Not av.

The Commonwealth Bank. Till 1924 the Australian banking system was without a central bank. Its main functions: issue of notes, control of credit, regulation of the foreign exchanges, were up till 1910 in the hands of the trading banks alone. In 1910 the Australian Notes Act was passed. It invested the right of issuing notes in the Federal Treasury. The Treasury ceased to issue notes in 1927.

In 1910 the Labour Party came into power. By an Act of 1911 the "Commonwealth Bank of Australia" was founded, and began to work in 1912. (Capital, £1,000,000.)

By the Act of 22nd August, 1924, the Commonwealth Bank was organized and endowed with all functions of a modern central bank. The note issue was centralized in a special note issue department, which is separated from the savings bank department and the trading department of the bank. Against all notes the bank had to hold a reserve of 25 per cent in gold. The trading banks must hold cash reserves with the Commonwealth Bank. The bank re-discounts bills of exchange at its published rate. It acts as the last credit reserve of the banking system.

Between 1929 and 1931 the world economic crisis caused a fall in the prices of Australian export goods of about 46 per cent, whereas the fall in the prices of imported goods was considerably smaller. The total value of exports fell sharply.

AUSTRALIAN FOREIGN TRADE, 1928-31

Year	Export	Import
	(million £)	
1928-29	141.6	143.6
1929-30	125.0	131.0
1930-31	89.3	61.0

In addition interest and sinking funds on foreign loans had to be paid and the crisis led to a sharp reduction of foreign borrowing since 1929.

This situation created a severe stress on the rate of exchange of the Australian Pound. During 1930 the Government and the Commonwealth Bank tried to keep it at par. In the preceding year (November) the trading banks had been legally forced to sell all their gold to the Commonwealth Bank, which shipped a great part of it to London (1929-30, £25 million). Nevertheless, a devaluation of the £A. (made possible by the legal embargo on gold exports, November, 1929) appeared at first, in 1929, and slowly increasing reached 30 per cent in January, 1931. In December of the same year the Commonwealth Bank stabilized the rate of exchange on London at £A 125 to £100 sterling. This meant the official substitution of the gold standard by a sterling standard. Australia joined the sterling "Block" and enjoyed its stability. Meanwhile the legal cover of Australian notes had been reduced to 15 per cent gold (June, 1931) for the next four years; after which it was to be raised to its old level. Since England left gold (1931) and the £A. had been stabilized in sterling, a sterling reserve became more important than a gold reserve. Permission was therefore given to the Commonwealth Bank by a law in 1932 to replace gold by sterling assets. In 1936 the note issue was covered to 33.4 per cent in sterling assets and to 0.7 per cent in gold.

NOTE ISSUE AND GOLD COVER 1914-36

Year	Notes Issued	Gold Cover (%)
	(million £)	
1914	11.6	not av.
1928	44.4	50.6
1931	50.7	21.0
1936	47.6	0.7

The Commonwealth Bank has succeeded in maintaining the stabilized rate. In consequence of the devaluation a reversal in the tendencies of Australia's foreign trade set in. Since 1931 exports have always been higher than imports. A surplus of £149 million from the excesses of exports on imports between 1931 and 1936 together with successful conversions of foreign loans has enabled Australia to accumulate enough London balances to meet all demands.

AUSTRALIAN FOREIGN TRADE, 1931-36

Year	Export	Import
	(million £)	
1931-32	85.3	44.7
1933-34	98.6	60.7
1935-36	108.0	85.2

II. PUBLIC FINANCE IN AUSTRALIA.

There are three tax levying authorities in Australia: the Commonwealth, the States, and the Municipalities. In comparison with Commonwealth and States revenue and expenditure, those of the Municipalities are small and have been omitted in the following statistics.

The Commonwealth. *Revenue.* Customs and excise have always been the most important sources of the Commonwealth income, taken over from the States in 1900. Other taxes are: The land tax (since 1910-

The budget for 1936-37 provides for a reduction in the sales tax from 5 per cent to 4 per cent, and a reduction of 10 per cent in the normal rate of the income tax.

Expenditure. In 1900 the Commonwealth took over from the States the income from customs and excise. As equivalent, the Commonwealth pays annually large amounts to the States in the form of interest and sinking fund on States' debts, grants for roads and other special purposes. Other important items of the Commonwealth expenditure are the Invalid and Old Age pensions, the costs for defence, and the Post Office.



KING STREET, ADELAIDE

In the foreground is the Post Office.

Photo Australian National Travel Association

11), estate duties (since 1914-15), the income tax (since 1915-16), the sales tax (since 1930-31). Of these taxes income tax and sales tax yielded the greatest amounts.

TOTAL REVENUE OF THE COMMONWEALTH 1902-36

Year	Revenue (million £)
1901-02	11.3
1910-11	15.5
1920-21	51.8
1929-30	72.8
1935-36	82.2 (A)

The following table serves as illustration of the income side of the Commonwealth budget, 1935-36—

COMMONWEALTH REVENUE, 1935-36

	(million £)
Customs, excise	41.3 (A)
Sales tax	9.4 (A)
Income tax	8.7 (A)
Other taxes	4.2 (A)
Business undertakings (P.O., Rail.)	15.2 (A)
Miscellaneous	3.4 (A)
Total Revenue	82.2 (A)

TOTAL EXPENDITURE COMMONWEALTH 1902-36

	(million £)
1902	3.9
1910	7.5
1920	42.9
1929	77.2
1936	78.6 (A.)

In some years before 1931, especially in 1929-30 and 1930-31, expenditure was higher than income. Since 1931-32 each year has shown a surplus. (1931-35, £6.9 million (A.); 1935-36, £3.56 million (A).)

The States. *Revenue.* The main resources of the States income are the receipts from their business undertakings (railways, tramways, water works, etc.), from taxation (income tax, etc.), and from payments from the Commonwealth. Total revenue of all States amounted to—

	(million £)
1902	20.8
1910	28.9
1920	64.4
1929	111.0
1934	95.6 (A.)

To the income of 1934, taxes contributed £31.3 million (A.), business undertakings £50.0 million (A.), and payments from the Commonwealth £9.6 million (A.).

Expenditure. The main items of States' expenditure are: interest and sinking fund on loans, business undertakings (railways, tramways, etc.), education, social services.

The sharp rise in States' expenditure in the post-war period is mainly caused by the increase of interest payments on States' loans.

STATES' EXPENDITURE 1902-34

	(million £)
1902	29.2
1910	35.4
1920	72.0
1929	122.0
1934	112.0 (A)

(Figures for 1936 not yet available.)

From the total expenditure of the States in 1934, not less than £41 million (A.) were interest and sinking fund on loans, £29.4 million (A.) for business undertakings, £9 million (A.) for education.

Unlike the Commonwealth the States have not yet reached the stage of balanced budgets. (Accumulated deficits of all States, 1936: £55,000,000. Deficit, 1935-36: £2.44 million (A.).)

AUSTRALIAN PUBLIC DEBT, 1912-36
(Million £)

Year	Commonwealth	States	Total	Interest Payable	
				Overseas	In Australia
1912	16.0	278.0	294.0	6.9	3.5
1920	352.0	426.0	778.0	15.4	18.8
1929	385.0	719.0	1104.0	27.5	28.0
1934	393.0	829.0	1222.0	25.8	23.5
1936	Not av.	Not av.	1254.0	20.7	24.2

BARRIER REEF. See AUSTRALIA, Vol. I.

BARTON, SIR EDMUND (1849-1920). Australia's first Federal Prime Minister. He was notable for his unswerving loyalty both to Australia and the Empire. He was educated at Sydney, called to the Bar in 1871, and made a Queen's Counsel in 1889. He entered politics in 1879, when he was elected to the New South Wales Parliament as a representative of Sydney University: he became Speaker in 1883. After four years he resigned, to become Attorney-General. He was a strenuous advocate of federation and was the chief figure at the Convention of 1897. In 1900 he headed a delegation to England to urge federation upon the Imperial Government. When finally Federation became an accomplished fact in 1901, he was appointed first Prime Minister. At the Colonial Conference of 1902, Barton promised the Imperial Government that Australia would provide herself with a navy, but, in deference to the wishes of the Admiralty, he modified this to an offer to pay £200,000 a year towards the maintenance of a British squadron in Australian waters. After defeat in the succeeding elections he became senior puisne judge of the Australian High Court.

BASS, GEORGE (1763-1803). Explorer. A native of Lincolnshire, England, he was intended for a medical career, and in 1795 he obtained a post as a surgeon on board H.M.S. *Reliance*, bound for Australia. One of his fellow passengers was Matthew Flinders. On arrival at Port Jackson they made a number of explorations, travelling up the George's River, and down the coast to Lake Illawarra. Bass made a journey to Western Port and later, with Flinders, circum-

navigated Tasmania in the *Norfolk*. In 1797 he discovered coal at Coalcliff in northern Illawarra. In 1801 he engaged in commercial work, making journeys to Tahiti and Hawaii. In 1803 he set forth on a voyage to Peru, and was never heard of again.

BEAN, CHARLES E. WOODROW (born 1879). Official historian of the War for the Australian Government. He was born at Bathurst, N.S.W., and educated at Clifton and Hertford College, Oxford. After being called to the Bar from the Inner Temple (1903), and admitted to the Bar of the Supreme Court, N.S.W. (1904), he became a junior reporter of the *Sydney Morning Herald*. From 1910 to 1913 he was London correspondent of the *Morning Herald*, and was made leader writer in 1914. Throughout the war period he was official correspondent with the Australian forces. His publications include *Letters from France* (1917), *In Your Hands, Australians* (1919), *Official History of Australia in the War of 1914-18*, Vols. I and II (Anzac), 1922 and 1925; Vols. III and IV (France, 1916-17), 1929 and 1933.

BELL, COL. HON. GEORGE JOHN (born 1872). Speaker of the Commonwealth Parliament. He served in the South African War with the Victorian contingent, earning the D.S.O. He was severely wounded and was mentioned in dispatches twice. During the World War he saw active service in Gallipoli, Egypt, and Palestine, being awarded the C.M.G. On his return to Australia he was elected member of the House of Representatives and, apart from the period 1922-25, has been a member continuously. From 1927 to 1930 he was A.D.C. to the Governor-General, and from 1932 to 1934 officiated as Chairman of Committees. In 1934 he was appointed Speaker.

BENDIGO. A city of Victoria 100 miles from Melbourne. There are large resources of low grade gold-bearing quartz which are extensively worked. Population 34,000.

BERRY, SIR GRAHAM (1822-1904). Victorian statesman. He migrated from England to Melbourne in 1852 and opened a store which prospered. He bought, in 1860, the *Collingwood Observer*, and entered local politics. Leaving Melbourne for Geelong in 1866 he bought two Geelong papers and amalgamated them. Again he threw himself into politics, and in 1871 became Treasurer and Minister for Customs. An appointment of his father-in-law to a government post in 1872 created such a storm that he was driven from office. A taxation crisis in 1875 brought about his return and for a short time he was Premier. Not until 1877 was he able to command a secure majority in the legislature. There followed a stormy period in Victorian politics which did not end until in 1880



BENDIGO

An old gold mining centre and the fourth largest city in Victoria.

Photo: Australian National Travel Association

Berry joined forces with James Service. In February, 1886, he resigned his ministerial position to become Agent-General in London. By 1892 he had returned to Melbourne and became Speaker of the Assembly in 1894. He retired three years later.

BIRDWOOD, FIELD-MARSHAL SIR WILLIAM R. See article, Vol. I.

BISMARCK ARCHIPELAGO. See article, Vol. I.

BLAKELEY, ARTHUR (born 1886). Inspector of Federal Awards in Australia since 1935. Born at Gilberton, South Australia.



ARTHUR BLAKELEY

He was educated at North Broken Hill Convent School. From 1910 to 1921 he was an energetic official of the Australian Workers' Union, being organizer, secretary, and general president in turn. He entered the House of Representatives as a member for Darling in 1917 and represented that constituency for seven-

teen years. Between 1920 and 1928, and 1932 and 1934, he was secretary to the Federal Parliamentary Labour Party; during the years 1928 and 1929 he was Deputy Leader. From 1929 to 1931 he was Minister for Home Affairs in the Federal Government.

BLAXLAND, GREGORY (1778-1853). Founder of the Australian wine industry. He migrated from Kent, England, with his elder brother John. After exploring the gorges of the Nepean, he crossed the Blue

Mountains plateau to the edge of the Bathurst Plains. He and his companions were rewarded with 1000 acres each for their discovery, but Blaxland sold his rights, being financially embarrassed at the time. He settled on Brush Farm, on the Parramatta, and planted vines imported from Cape Colony. He was the first manufacturer of Australian wine, and was awarded gold and silver medals of the Royal Society of Arts. In 1827 he was a member of the delegation that visited England to present a petition to the House of Commons asking that Australia should have the privilege of trial by jury and of representative government.

BLAXLAND, JOHN (1769-1845).

An Australian pioneer cattle-raiser.

After an army career, he abandoned his estate in Kent, England, and, accompanied by his younger brother Gregory, migrated to Australia in 1807. He was promised free passage for his family and goods, the employment of eighty convicts for eighteen months, and was promised 8000 acres of land on condition that he used £6000 to develop agriculture. When he arrived, however, he insisted on changes in the gifts that he had been promised. His attitude annoyed the authorities and he sailed to England to protest against the treatment meted out to him by Bligh and Johnston. After being kept in England for three years he was allowed to return to Australia, and the local authorities were compelled to accede to his requests. From 1829 to 1844 he was a member of the legislative councils.

BLIGH, WILLIAM (1754-1817). English admiral, who came from a good Cornish family. He sailed under Captain Cook on his second voyage round the world. After a few more years of service, he was given command of the *Bounty* to collect specimens of the breadfruit, of which he was the discoverer, with the object of introducing them to the West Indies. Under his severe and strict treatment, his men mutinied (1789) and cast him adrift with eighteen other men in an open boat. After three months of perilous hardships faced with undaunted courage, he arrived at Timor, a distance of 3618 miles. A number of the mutineers established a colony on Pitcairn Island, which was not discovered until 1808, when only one of the original crew of the *Bounty* was still living.

In 1806 Bligh was made Governor of New South Wales, where the unruly disposition of the New South Wales Corps warranted stern and strict measures. Such punishments

as he meted out were, however, more to satisfy his personal dislikes than for the sake of discipline, and in 1808 the Corps mutinied. The officer in charge put Bligh under arrest, and he was sent to England by way of Tasmania. The British Government, however, reinstated him for one day, and rescinded all official measures that had been taken during and after the mutiny. Bligh died in England.

BLUE MOUNTAINS. A branch of the Great Dividing Range, the Blue Mountains lie in New South Wales and have as their northern boundary the Capertee and Colo rivers, whilst the Cox cuts them off on the South and West. They form a rugged and



IN THE BLUE MOUNTAINS NEAR SYDNEY

They take their name from the blue haze which usually hangs over them. This haze makes photography difficult.

Photo: Cherry Kearton

almost impassable barrier, and their weird tortured shapes are due to the weather erosion of the shale which underlies the sandstone.

BOOMERANG. See article, Vol. I.

BOTTLE TREE. See article, Vol. I.

BOURKE, SIR RICHARD (1777-1855). Governor of New South Wales. After an army career, Bourke was appointed in 1831 to succeed General Darling as Governor of New South Wales and, during his six years

administration, he carried out many desirable reforms. Among other things, he established trial by jury, on lines similar to those prevailing in England; abolished the system of land rents, invited Press representatives to report the proceedings of the legislative council, established savings banks and greatly improved the facilities for public education. Above all else he was the friend of the "squatters," and his legislation legalized the advance of sheep-breeders into unexplored territory. In 1837 he resigned after disagreement with the home authorities, who insisted upon the reinstatement of Riddell, the Colonial treasurer, after Bourke had considered his suspension necessary.

BOWER BIRD. See article, Vol. I.

BRISBANE. See **QUEENSLAND**, Vol VII.

BRISBANE, SIR THOMAS MAKDOUGALL (1773-1860). A governor of New South Wales. He came to Sydney in 1812, after a brilliant army career, and among the reforms he carried out were those connected with the limitation of land grants and the systemization of convict labour. He abolished censorship of the Press and revised public finances. Immigration was encouraged and the population increased rapidly. The chief of his non-political activities was the erection and equipping, at his own cost, of an observatory at Parramatta. He was recalled in 1825.

BROKEN HILL. A mining city of New South Wales, 335 miles by rail from Adelaide and 703 miles from Sydney. It has a population of 26,750. Broken Hill is famed for the richness and extent of the silver-lead-zinc ores which underlie the surrounding country.

BROUGHTON, WILLIAM GRANT (1788-1853). The first Bishop of Australia. After holding several appointments in England, he was, in 1829, appointed Archdeacon of North South Wales, and by virtue of his position of head of the Church of England became member of the legislative and executive councils. He visited England in 1834 to represent to the ecclesiastical authorities in London the urgent need of more schools and hospitals in Australia, and on his return, when Australia was constituted an independent bishopric, he was appointed to the new See. Later the See was divided up and William Broughton became Bishop of Sydney and Metropolitan of Australasia.

BRUCE, STANLEY MELBOURNE (born 1883). One of Australia's greatest statesmen. Educated at Melbourne Grammar School and Trinity College, Cambridge, where he studied for the law, and was called to the Bar at the Middle Temple in 1906.

During the World War he served with the Royal Fusiliers and took part in the Suvla Bay landing. He also saw arduous active service in France. He was awarded the M.C. and the Croix de Guerre avec Palme. He was twice wounded and was mentioned in dispatches. Having been invalided back to Australia in 1917, he entered Parliament in 1918, being elected for Flinders, which he represented until 1929 and again from 1931 to 1933. In 1921 he represented his country at the Assembly of the League of Nations. In the same year he became Commonwealth Treasurer in Hughes's cabinet, and in 1923 he became Prime Minister and Minister for External Affairs in close



S. M. BRUCE
Photo: Central

association with Dr Earle Page. This combination was approved by the electorate in the elections of 1925 and 1928, and lasted until 1929. Bruce, during his Premiership, always showed keen anxiety to foster Imperial trade, and in 1926 he announced his dual policy of developing the coun-

try and attracting more immigrants. The two problems of development and immigration he held were inseparable. He went out of office from 1929 to 1932, but then accepted ministerial responsibility in the J. A. Lyons's Government, ranking as third member. In 1933 he was appointed High Commissioner for Australia in London. He represented his country at the Imperial conference at Ottawa in 1932 and the World Economic Conference of 1933. In 1936 he was President of the Council of the League of Nations.

BRUXNER, LT.-COL. HON. MICHAEL FREDERICK (born 1882). Soldier and statesman. He was born at Sandilands, N.S.W., and educated at Armidale and Sydney University. When the World War broke out he enlisted in the 6th Light Horse and served at Gallipoli (where he was severely wounded), Sinai, Palestine, and Syria, rising to be Quarter-Master-General of the Anzac Mounted Division. For his services in the war he was awarded the D.S.O. and was made a Chevalier Legion d'Honneur. He became representative for Tenterfield in the N.S.W. Legislative Assembly in 1920, and two years later was the Leader of the Progressive Party. From 1927 to 1930 he was Minister for Local Government, N.S.W., and since

1932 he has been Minister of Transport and Deputy Premier. He is the Leader of the United County Party in the State Parliament **BUDGERIGAR**. See article, Vol. II.

BUTLER, RICHARD LAYTON (born 1885). Prime Minister of South Australia since 1933.

Born at Yattalunga Station, South Australia, he was educated at Mallala Public School and Adelaide Agricultural School. He was engaged in stock raising, farming, and grazing, and was elected as a Liberal for Wooroorra in 1915. He became Leader of the Opposition in the South Australian Parliament in 1925, and Prime Minister, Treasurer, and Minister of Railways from 1927 to 1930. After three years in Opposition, he became Prime Minister once more in 1933.



RICHARD BUTLER
Photo: Central

CANBERRA. See article, Vol. II.

CASEY, RICHARD GARDINER (born 1890). Appointed Treasurer of the Commonwealth of Australia, 1936. He was born at Melbourne, educated at the Church of England Grammar School, Melbourne University, and Cambridge. During the World War he served in Gallipoli and France, being mentioned in dispatches and being awarded the D.S.O. and M.C. Between 1924 and 1927 he was Australian liaison officer at the British Foreign Office. After a short period as Foreign Affairs Officer at Canberra, he resumed his former duties in London, returning to Australia in 1931. In that year he was elected to represent Corio in the Federal Parliament, and in 1933 he was appointed Assistant Federal Treasurer.

CENTRAL AUSTRALIA. See article, Vol. II.

CENTRAL LOWLANDS. See AUSTRALIA, Vol. I.

CHAUVEL, GENERAL SIR HENRY GEORGE (born 1865). Distinguished soldier. He was born in New South Wales and educated at Sydney and Toowoomba. He joined the N.S.W. Cavalry Regiment in 1886 and gained rapid promotion. During the South African War he commanded a battalion of the Commonwealth Horse, was mentioned in dispatches and awarded the C.M.G. From 1911 to 1914 he was Adjutant-General to the Australian Military Forces, and was the Australian representative on the Imperial General Staff at the British War Office in

1914. During the World War he commanded different divisions of the Australian and New Zealand Forces in Egypt, Gallipoli, Palestine, and Syria, being mentioned in dispatches on nine occasions, and being awarded the C.B., K.C.M.G., K.C.B., G.C.M.G., and several French honours. After the war he was made Inspector-General to the Australian Military Forces (1919-30), and Chief of the Australian General Staff (1923-30).

CLIMATE. The climate of Australia is almost like that of the area between Cadiz, Corinth, Khartoum, and Kano. In the north it is tropical, in the middle third semi-tropical, and down south warm temperate. Its chief characteristic is heat.

In the south, however, uncomfortable conditions do not last longer than fourteen consecutive days, and the climate is on the whole delightful and healthy, especially in the elevated areas. It is warm during the day and usually cool at night, and there are refreshing dews. *W.* breezes moderate the heat of summer on the coastal plains. Though in most years the thermometer reaches 110° F. in the shade, and the diurnal range of temperature often amounts to 50° F. inland, the mean temperature of the year ranges from 58° F. at Melbourne to round about 63° F. at Sydney, Adelaide and Perth. Except in a small alpine area in the south-east, winter frosts are rarely severe and snow falls only on the highest elevations. Unfortunately, periods of protracted drought are frequent in the inland areas, where evaporation is great. Violent hot winds also occasionally blow during the summer, filling the air with clouds of choking dust, and there are sudden variations in temperature which sometimes amount to 60° F. in a few hours. Terrible floods occur along the east coast.

Though rain falls uniformly through the twelve months of the year in a part of Victoria and New South Wales, the southern rainy season is in winter, which lasts from May to October throughout the continent. The average annual fall is 20-30 in. on the south coast, and 35-65 in. on the maritime side of the eastern mountains, but generally less than 15 in. inland.

The climate of the middle third of Australia is arid, except on the narrow eastern coastal strip. Inland and in the west the area lies between the summer and winter rain belts, and is dominated by the trade winds which blow from the south-east practically all the year round in Queensland and Central Australia, and in the same direction for eight months of the year in north-west Australia, being south-westerlies in the latter area for the other four months. After being compelled

to deposit their moisture as rain by and on the coastal ranges, particularly in eastern Australia, these trade winds become drier as they travel inwards. Inland the heat is intense, reaching 110° F. in the shade day after day for months in summer in the west. On winter nights there is a corresponding intense cold due to radiation. Rain falls only at rare and irregular intervals, generally in summer and torrentially, and rarely exceeds 12 in. in a year, the yearly



LAKE ST CLAIR, TASMANIA

No part of Australia, save perhaps Tasmania, resembles Britain. The mean temperature of the island is only 55° F.

Photo: Australian National Travel Association

average being only 5 in. Evaporation is greater than the rainfall, and destructive droughts are frequent, often lasting several years.

In the torrid northern part of Australia the rains occur during the summer, so the heat is still more tangible. The mean temperature is about 80° F. in the dry season and 85° F. in the wet. When the south-east monsoon prevails the heat is not so oppressive. Some parts of the Queensland coast have as much as 100 in. of rain in the year, and in North Australia five months of the year are wet, the heaviest rain of the north-west monsoon falling towards February. The average rainfall in this part ranges from 20 in. inland to 58 in. on the north coast. In spite of its heavy summer rainfall, however, the major part of the Australian tropics



STORM OVER THE CHARLOTTE PASS, NEW SOUTH WALES

Photo. Australian National Travel Association

has six months or more of drought annually, so its climate is essentially arid. Frosts are unknown in the coastal districts. Only during the so-called winter is the climate of the Kimberleys at all agreeable. It is much warmer than that of the great cotton belt of South Carolina, and when, towards December, the relative humidity is increased by the proximity of thunderstorms the weather is most unpleasant. In the early months of the year hurricanes called "willy-willies" now and again strike the coast north of the Tropic of Capricorn and reach into the southern Kimberleys.

No part of Australia remotely resembles Britain, except perhaps Tasmania. In this island the annual rainfall reaches 100 in., but the mean temperature is only 55° F.

COHEN, SIR HENRY ISAAC (born 1872). K.C. and politician. Born at Melbourne, he was educated at the University and admitted to the Bar in 1896. He was made a K.C. in 1920. In 1921 he was elected representative of Melbourne Province in the Legislative Council, and in 1924 held various offices in Victoria, including Minister of Public Works, Mines, Attorney-General, and Solicitor-General. In 1928 he was Minister of Public Institutions, and in 1935 he was appointed Minister of Water Supply and Minister of Electrical Undertakings in Victoria.

COLEBATCH, SIR HAL PATESHALL (born 1872). Journalist and statesman. Born in Herefordshire, he was educated in Goolwa, South Australia whither he had migrated in 1878. Later he adopted journalism as a career. Public affairs attracted him and he became Mayor of Northam, W.A., in 1903, and held office for three years. Later he was Minister for Education, Minister for Justice, Minister for the North-west, and Premier of Western

Australia. He was a member of the Commonwealth Constitution Royal Commission (1927-28), and a member of the Commonwealth Senate from 1928 to 1933. He was Agent-General for Western Australia from 1923 to 1927, and was again appointed to that position in 1933.

COLLIER, HON. PHILIP (born 1874). Premier and Treasurer of West Australia since 1933. He was born at Woodstock, Victoria, and migrated to the goldfields of Western Australia in 1904. He was elected as Member of Parliament for Boulder in the succeeding year, and from 1911 to 1914 was Minister for Mines and Water Supply in Western Australia. For two years he held other Ministerial offices, and from 1916 to 1924 he was Leader of the Parliamentary Labour Party in Opposition. He then became Prime Minister and Treasurer until 1930, when his party went into Opposition again.



SIR HAL COLEBATCH

Photo. Fox



HON. PHILIP COLLIER

Photo. Photopress

but once more became Prime Minister in 1933.

COMMUNICATIONS AND TRANSPORT.

Australia, before the era of air travel, was very little favoured by Nature as regards transport. Distances by sea from the great world centres were great; the coastline is little indented—there is only one really deep gulf, that of Carpentaria; there are no rivers navigable for any distance from their mouths, though the inland river systems of the Murray, the Murrumbidgee and the Darling give, in some of their stretches, facilities for inland water transport; the Great Dividing Range fronting the east coast, though not lofty, is very rugged, and for some years defied all efforts to find a practicable road across.

Early means of communication were by roads (rarely metalled); and in the use of these roads ox transport was common; teams of bullocks—sometimes as many as twenty in a team—dragged great drays across dirt tracks which were sometimes impassible in wet weather. Later the camel was introduced in the far *haid* areas. Animal transport is still important in Australia, though the railways and the motor are fast ousting it.

Railway construction was begun in 1850; in 1883 the first inter-state railway connecting New South Wales and Victoria was completed. Afterwards progress was enterprising. Taking as a convenient datum line the first decade of this century, before the Federal Government (constituted 1900) began to reinforce the railway construction work of the states, the various states had coped successfully with vast distances by railway lines which linked together all the important centres. From various points along the coast railways ran inland distances up to 600 miles. All the capitals on the east and south coast were connected by railway, and one could travel from Brisbane to Adelaide (1790 miles) in sixty-two hours. One continuous railway journey, from Rockhampton in Queensland to Oodnadatta in South Australia, covered 3303 miles. Altogether there were 15,258 miles of railways in Australia.

With the coming of the Federation, a transcontinental line connecting Perth with Adelaide (and consequently with the other capitals) was put in hand, and completed in 1917. To-day Australia has about 28,000 miles of railway (nearly all State-owned), the capital cost of which has been about £330,000,000. The net revenue from these railways in 1935 was £11,647,000, a little more than 3 per cent on the cost of construction. Seeing that much of the railway construction was developmental, and that the transcontinental railway in particular cannot hope to pay more than

working expenses for some time to come, the railway systems have been a reasonably good investment. Unfortunately, the Australian railway system is handicapped by various gauges. Excluding light spur railways and considering only important government-owned lines, there are 6000 miles of broad gauge; about the same extent of standard gauge; and over 12,000 miles of narrow gauge. The problem of standardizing the gauges of, at any rate, the most important inter-state lines now faces the Federal Government, not only for the convenience of commerce, but also of defence plans. The line from Grafton (New South Wales) to Brisbane (Queensland) which was opened 1930, was constructed to overcome the break of gauge between Sydney and Brisbane, and is the first step towards uniform gauge railway communication between the capitals of the mainland states. It was constructed under agreement between the Commonwealth and the States of New South Wales and Queensland, and is of 4 ft. 8½ in. gauge.

Shipping. Australia has good steamship services with Great Britain, and with some other European countries and North America. These lines are not Australian-owned to any extent. Inter-state shipping is preserved by legislation for Australian shipowners, with some small exceptions in favour of British lines trading overseas and in the course of their voyages doing some inter-state carrying. Australian overseas shipping has an even balance of about 6,000,000 tons yearly of tonnage entered and cleared. The proportion represented by ballast is about 25 per cent entry and about 12 per cent clearance. British shipping carries about 66 per cent of the total overseas trade.

Additional to the overseas tonnage is the inter-state and the coastal (from one port to another in the same state). These combined almost equal the overseas tonnage and some of the ports have impressive trade figures; tonnage entered at Sydney totals about 10,000,000 tons a year, a higher figure than that of any British ports except London, Liverpool, and Southampton. There are 2232 ships with a total tonnage of 326,886 on the Australian register.

Motor Transport. Australia, its vast distances little broken by mountains, offers ideal conditions for the development of motor transport systems. But political restrictions have materially interfered with their natural growth. As the railways are almost wholly State-owned, there has been a tendency—carried to absurd lengths in some instances—to hamper motor transport in order to save the railways from competition. Undoubtedly, if free economic conditions ruled, it would be found that much of



MEANS OF COMMUNICATION

Except on three rivers, facilities for inland water traffic are not available and animal transport was at first the only means. Ox teams, horses and, later, camels were used on roads mainly unmetalled. Railways, begun in 1850, and motor transport are now replacing animal transport. Stable weather conditions favour air transport; in addition to regular services some special ones such as Air Ambulance and Air Survey are commonly employed. 1. An old stage coach. 2. Camel caravan. 3. Oxen transporting wool. 4. Modern air liner. 5. Engine leaving Adelaide Central. 6. Horse teams moving wheat. 7. Boats on the Murray River. 8. Cairns railway at Stony Creekfalls bridge.

Agent-General for Queensland; Australian National Travel Association; Courier-Mail

the traffic now carried by rail could be better dealt with by motors; and that "development lines" of railway in thinly populated districts could be replaced by motor roads. Within the last few years the state governments have entered into the motor transport industry, both for urban passenger traffic and goods traffic, and this is favouring the development of motor transport. In the last year for which figures are available (1936) there were 468,000 private cars and 168,000 commercial vehicles in use. Since then, the figures in both categories have greatly increased.

Air Travel. Australia has welcomed enthusiastically the era of air travel, for air conditions normally being stable, air travel is thereby made more easy. Since 1920 the Government has given financial assistance to the development of civil aviation. In addition to the chief overseas service—that to the Mother Country *via* India—there are regular services (one of them covering a 1467 miles route) linking all the chief Australian towns; and a variety of special services, such as the Air Ambulance and the Air Survey for thinly settled districts. The "flying doctor," who will travel by aeroplane to patients in the remotest parts, is a picturesque figure of the Australian back country; and the development of gold-mining in Papua (the Australian part of New Guinea) with the aid of aircraft is another vivid instance of "air-mindedness." The aeroplane in Papua covers in one hour a journey which by land would take a week. In 1936 the estimated total mileage flown by civil aircraft in Australia was 5,528,000. Associated Aero Clubs provide facilities in all states for flying instruction and practice.

COOK, SIR JOSEPH (born 1860). Statesman. Born in Staffordshire, England, Cook migrated to Australia in 1885. In 1891 he



SIR JOSEPH COOK
Photo: Central

entered the New South Wales Parliament, and three years later he was appointed Postmaster-General. He also held ministerial rank in the Departments of Mines and Agriculture. He was a member of the first Federal Parliament and was appointed Minister of Defence in 1909. When the Labour Party was defeated in 1913 he became Prime Minister at the head of the "Fusion" Party but he had a majority of only one in the House of Representatives,

whereas the Labour Party was in an overwhelming majority in the Senate. Cook dissolved Parliament in 1914, but was defeated at the polls. In 1917 W. M. Hughes made him Minister for the Navy, and he and Hughes attended the Imperial War Cabinet and the Imperial War Conference of 1918. He was a signatory of the Peace Treaty in 1919. From 1921 to 1927 Cook was High Commissioner for the Commonwealth in London. In 1922 he was Australia's senior delegate to the League of Nation's Assembly.

DARLING, SIR RALPH (1775-1858). A Governor of New South Wales. He was appointed in 1825 at a time when the colony was greatly disturbed by political divisions. This unrest was intensified by severe economic depression in 1826. His strong sense of military discipline soon landed him into difficulties. There were bitter attacks on him in the Press on account of the punishments he meted out to the soldiers. As a reprisal he endeavoured to introduce a system of licensing the Press and to compel newspaper owners to pay stamp duties. When these proposals failed, he resorted to a series of libel actions and, in 1831, he was recalled. In spite of these troublous events, Darling, however, found time to send exploring parties into Queensland to improve the judicial system, built many good roads, re-organized the customs department, established an inland post, and dealt successfully with currency difficulties. Darling was the first to claim British sovereignty over the whole of Australia. Darling Downs and Darling River were named after him.

DARLING, RIVER. The main stream of a vast drainage system of Queensland and New South Wales, it links with the Murray system at Wentworth on the borders of New South Wales and Victoria. The resulting river known as the Murray forms the dividing line of these states until it runs into South Australia, where it winds sluggishly until it enters the sea at Encounter Bay. The Darling River is extremely uneven in its flow and it may dry up for considerable periods.

DARWIN, PORT. See NORTHERN TERRITORY, Vol. VI.

DAVID, SIR TANNATT WILLIAM EDGEWORTH (1858-1934). Geologist and leader of scientific knowledge in Australia. A native of Wales, he was educated at Oxford, and proceeded to New South Wales in 1882 to enter the Government service as a geological surveyor. In 1886 he discovered important coal seams near Maitland. He became professor of geology and physical geography at Sydney in 1891, and in 1896 was elected President of the Royal Society of New South Wales. He took part in a number of

geological expeditions to India and Mexico, and accompanied the Shackleton expedition to the Antarctic, locating the south magnetic pole in 1909. During the World War he accompanied an Australian mining corps to France, being awarded the D.S.O. in 1918. He returned to Sydney University on the conclusion of hostilities.

DEAKIN, ALFRED (1856-1919). Statesman. He was born in Melbourne and educated at Melbourne University, being called to the Victorian Bar in 1877. He entered the Victorian Parliament in 1880, and became a minister in 1883. In 1900 he was a representative of Victoria in the delegation to London, prior to the passing of the Commonwealth Constitution Act. When in 1901 the first Federal Government was formed by Barton, Deakin became Attorney-General. On the resignation of Barton in 1903, Deakin became Prime Minister. His three periods of office were 1903-4, 1905-8, and 1909-10. In his second administration, Deakin, at the head of the Protectionists, worked with the support of the Labour Party, since none of the three parties had a clear majority over the other two. His third administration was mainly anti-socialist in character, this time the Labour Party forming the Opposition. When he retired from politics in 1910 he was badly shattered in health. Deakin was always a consistent supporter of Imperial Preference, and urged it strongly at the 1907 Imperial Conference. He authorized Australian naval construction in 1909, and invited Lord Kitchener to Australia to discuss the problem of defence. After studying the Swiss model of army organization, he created for Australia "a citizen soldiery inspired by patriotism." He was primarily responsible for the Irrigation Act, 1886.

DINGO. See article, Vol. III.

DODDS, MAJOR GENERAL THOMAS HENRY (born 1873). He served in the South African War with the Queensland contingent, was mentioned in dispatches and won the D.S.O. For his services in the World War he was awarded the C.M.G. From 1920 to 1922 he was Military Secretary to the Australian Commonwealth Forces, and from 1924 to 1927 he was Australian Military Representative at the British War Office and Military Adviser to the High Commissioner for Australia in London. Appointments held subsequently were District Base Commandant and Commander of the First Division, N.S.W. (1927-29), and Adjutant-General of the Australian Military Forces (1929-34).

DUCKBILL. See article, Vol. III.

DUFFY, SIR CHARLES GAVAN (1816-1903). A distinguished Irish and Australian politician. He commenced his political career as

a journalist, working in both Dublin and Belfast. He was frequently arraigned, but never convicted, on charges of treason, and was elected to the British Parliament as a member of the Independent Irish Party. Becoming tired of British politics, he emigrated to Melbourne in 1856. He at once threw himself into Victorian politics and, with O'Shanassy, soon gained a pre-eminent position. He was a stormy petrel in politics, constantly involved in bitter controversy. In June, 1871, he became Prime Minister, and was identified with a policy of high tariffs. He lost office within twelve months, however, on charges of favouring his fellow countrymen when making official appointments. He became Speaker in 1877, but retired from politics in 1879 and spent the remainder of his days in southern France, writing on Irish history and colonial politics.

EASTERN HIGHLANDS. See AUSTRALIA, Vol. I.

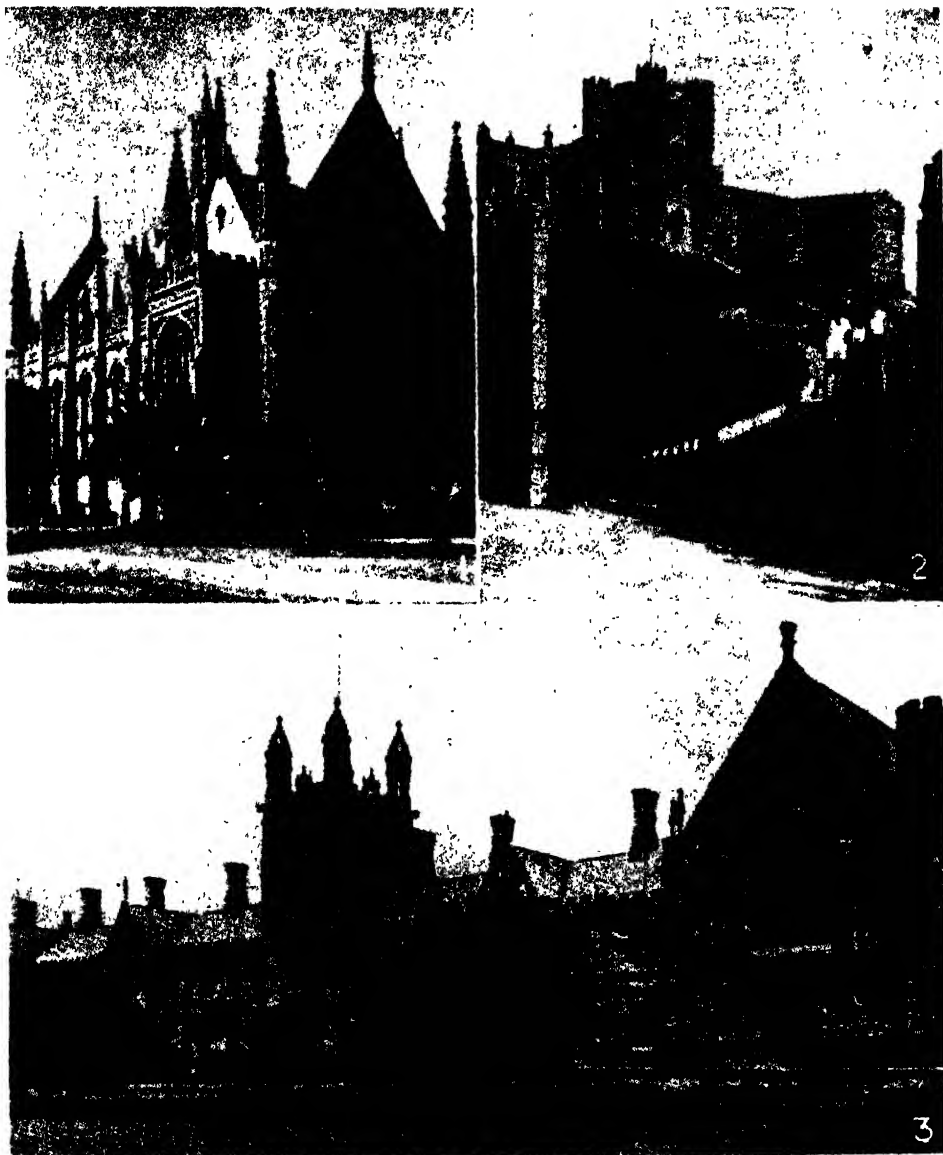
ECHIDNA. See article, Vol. III.

EDUCATION. In Australia a serious attempt is made to bring the blessings of education to every child, however remote its home from the centres of civilization. If settlement is so sparse that ten or twelve scholars cannot be collected together at one centre, the State will try to supply means of conveyance so that children can be gathered in from a wider area. As a last resort the Government will, if called upon, subsidize the parent in an isolated locality that he may have his children educated by a private tutor or governess.

The Australian educational system at the outset was closely modelled on that of the Mother Country; has continued in close touch with it since; and still draws from Great Britain a small proportion of its teachers in the higher grades. Long before the "Rhodes scholarships" were established, Tasmania used to send, with State scholarships, two students each year to British Universities.

There is, at the present time, a system of interchange, for short terms, of teachers between Australia and England. Several Australian private schools are recognized as ranking with the great Public Schools of the Mother Country, and Australian University degrees, conferred in all departments of learning, are highly regarded abroad.

Education is free and compulsory from the age of six (or seven) to fourteen. Provision is made for retarded children and also for children of special ability. The system (there are some variations in the different States) usually provides for a steady gradation from kindergarten to university. Technical education, curiously enough, has not been developed greatly by the State schools in its



EDUCATION

The Australian educational system was at the outset closely modelled on that of the Mother Country and has continued in close touch with it since. 1. Wilson Hall, Melbourne University. 2. Melbourne Boys High School, South Yarra. 3. Sydney University.

Photos: Australian National Travel Association

specialized form, but the general curriculum provides for some measure of what may be considered technical education. Business colleges and shorthand schools (privately conducted) have developed greatly in recent years; in 1933 enrolments in such schools totalled 18,500.

There is an excellent system of agricul-

tural education—colleges and experimental farms—where resident pupils, for periods of from one to three years, can acquire practical pastoral and agricultural knowledge at very small expense.

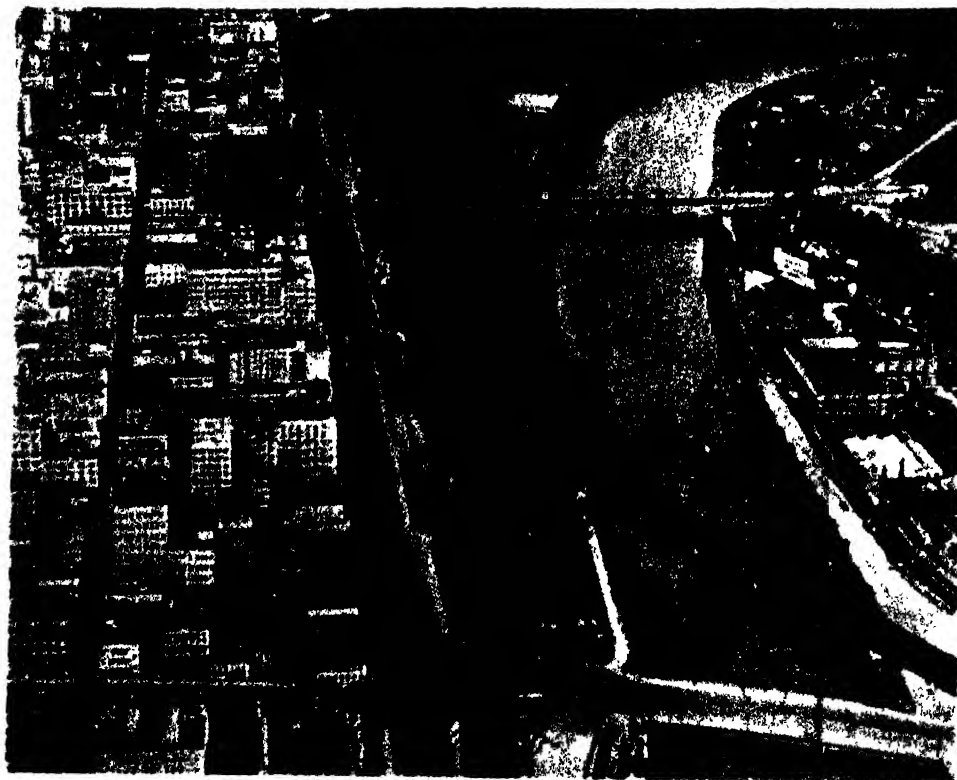
An educational experiment unique in the British Empire was introduced in Australia in 1912-13: a system of compulsory primary

military education. Its purpose was not to make professional soldiers of the male population, but to equip all for the carrying out of the duty of defending their country at need. From twelve to fourteen, boys were to be trained as junior cadets (wearing no uniform and devoting ninety hours a year to drill); from fourteen to eighteen as senior cadets (devoting the equivalent of sixteen days a year to drill); from eighteen to twenty-five young men had to give sixteen days a year to military training (twenty-five days for the Artillery and Engineers). The religious feelings of such people as Quakers were safeguarded by the provision that no one having a conscientious objection to bear arms should be forced to do so. After the World War the system was suspended for financial reasons.

The State elementary schools, with an enrolment of about a million children, and teaching staffs totalling about 33,000, are the chief bulwark of the educational system. They are supplemented by private schools with an enrolment of nearly a quarter of a

million children; these are partly under State supervision. Their pupils are chiefly drawn from denominations favouring religious teachings in schools, and from the more wealthy classes. There are secondary State schools for higher education. The total cost to the public purse of the State schools is about £8,800,000 a year (25s. per head of population).

Great attention is given to medical care of school children. Systems vary slightly in different states, but the general policy is that every child should be medically examined at least twice during the school years. All found in any way defective are reported to their parents with advice as to treatment. In the metropolitan areas this advice is followed up by school nurses who urge the importance of treatment and can arrange hospital or clinical attention, if necessary. Medical supervision follows the children to the High Schools. Travelling clinics deal with dental and eye defects outside the metropolitan area. Organized research work is carried out regarding abnormal conditions



AERIAL VIEW OF MELBOURNE, SHOWING THE YARRA YARRA RIVER AND THE BUSINESS QUARTER
The capital of Victoria ranks next in size to Sydney, and its university, which accommodates about 2800 students, is the second largest in Australia.

Photo: Australian Trade Publicity

affecting the health of scholars, such as goitre, stammering, left-handedness, etc. (In Victoria the medical branch of the education staff employs seven full-time doctors and eight dentists.) In Queensland special work is undertaken in regard to tropical conditions, and there is an ophthalmic school hostel. South Australia has a psychologist attached to its medical staff for schools.

The Universities of Australia are established at Sydney (teaching staff 200; students 3000); Melbourne (teaching staff 160, students 2800); Adelaide (teaching staff 125, students 2000); Brisbane (teaching staff 60, students 800); Perth (teaching staff 45, students 760); and Hobart (teaching staff 25, students 360).

These Universities have grants-in-aid from State funds, and enjoy munificent endowments from private charity; thus, under the Will of Sir Winthrop Hackett, Perth University received £425,000, and Sir Langdon Bonython recently gave £68,000 to Adelaide University. Sydney University enjoys £400,000 from the Challis Bequest and £246,000 from Mr G. H. Bosch. Analysing the balance sheet of a typical Australian University (Sydney), students' fees contributed only 25 per cent of its expenses, paying an average of £22 a year per student; State grants contributed a further 25 per cent; and the balance, 50 per cent, was made up from private foundations.

Scientific societies are numerous. There is a Royal Society in each of the capitals, the first dating back to 1821; combined membership about 1200. The Linnean Society of New South Wales does important work in Natural History and is richly endowed.

Australia is well equipped with libraries. The Commonwealth Parliament Library is also a National Library for the use of the public, both for borrowing and reference. It houses 113,149 books and 7750 pamphlets, and has a unique collection of Captain Cook MSS. The Public Library, Sydney, now includes the great private Mitchell Library of *Australiana* (bequeathed 1907 with an endowment of £70,000).

All the capitals and large towns have public libraries.

ELDER, SIR JAMES ALEXANDER MACKENZIE (born 1869). Chairman of the National Bank of Australasia Ltd. since 1937. He was trained for a legal career at Elgin, Scotland, but emigrated to Australia in 1891, and founded a successful merchanting firm at Melbourne. From 1924 to 1926 he was Commissioner for Australia in the United States of America, and he was the first commercial member of the Australian Commonwealth Board of Trade.

EUCALYPTUS. See article, Vol. III.

EYRE, EDWARD JOHN (1815-1901). At the age of seventeen he left his native Hornsea in Yorkshire and emigrated to Sydney. In 1837 he crossed overland to Adelaide, and for some years he did his best to open up the country. He was appointed Resident Magistrate in the Murray district of South Australia in 1841, resigning for reasons of health in 1844 and returning to England. There he wrote his *Journals of Expeditions of Discovery*. From 1846 to 1853 he was Lieutenant-Governor of New Zealand, from 1854 to 1860 Governor of St. Vincent, and in 1861 was made Governor of Jamaica. His suppression of a negro mutiny led to two trials, but in 1872 Gladstone paid his legal expenses from public funds, and in 1874 Disraeli allotted him a pension.

FARRER, WILLIAM JAMES (1845-1906). Scientist. He did much research for Australian wheat producers. He left Scotland to become a surveyor of lands in New South Wales in 1875. He became impressed with the necessity of improving Australian wheat so that it would become proof against rust, a weakness which at that time was costing Australia £2,500,000 per annum. In 1886 Farrer settled at Cuppercumberlong, and devoted himself to the task of breeding pedigree wheats adaptable to the varieties of Australian climate. He produced wheats that would resist rust and bunt and smut, wheats that would flourish in the hotter and more humid atmospheres of the north. His "Federation" wheat became established in New South Wales, Victoria, and South Australia, while "Florence" became the wheat of Queensland.

FISHER, ANDREW (1862-1922). He migrated to Queensland from his native county of Ayrshire in 1885, and worked in the coal-fields at Burrum and Gympie. He became associated with Labour Party politics and was elected to the Queensland Assembly in 1893. For a short period in 1899 he was Minister of Public Works. In 1901 he was elected to represent Wide Bay in the first Federal House of Representatives. When Watson formed his first Labour Government, Fisher was made Minister of Trade and Customs. When the Labour Party went into Opposition, Fisher became Deputy Leader, and in 1907, on Watson's resignation, became the Party Leader. For a short period in 1908 he was Prime Minister, but it was not until 1910, when he formed his second administration, that he was able to be an effective force. In the three years he governed, he secured the transfer of the Northern Territory to the Commonwealth, founded the Commonwealth Bank, passed the Federal Land Tax, and commenced the construction of a transcontinental railway. He carried out Deakin's promise to assist

the Imperial Government with the defence of Australia, creating an Australian naval squadron and developing military training. He was defeated in June, 1913, but was again in power in September, 1914. In 1915 he resigned from Parliament, and until 1921 he was High Commissioner.

FLAG, AUSTRALIAN. See **FLAGS**, Vol. III.

FLINDERS, MATTHEW (1774-1814). Explorer. He was born and educated at Donnington, England, and in spite of family opposition joined the navy. He accompanied Bligh on his second expedition to the South Seas, and after further naval experience, sailed on board the *Reliance* for Australia in 1795, making the acquaintance of George Bass.

Flinders made a number of exploratory excursions with Bass, and in 1801 he was placed in command of the *Investigation* on a voyage to New Holland. He sailed to Port Jackson, to Percy Isles, to Arnhem Bay, and round the western coast of Australia to Sydney. Desiring to return to England, he was given the *Cumberland*, a 28-ton vessel, and he was forced to seek shelter at the Ile de France (Mauritius). War had in the meantime broken out between England and France, a fact of which Flinders was not aware, and he was kept a prisoner until 1810. He spent his last days writing of his voyages and preparing his charts.

FLINDERS RANGE. A range of mountains in South Australia lying between Lakes Eyre and Frome, and in a north and south direction across the continent for

400 miles. The highest point is St. Mary's Peak, nearly 4000 ft.

FORREST, JOHN, FIRST BARON FORREST OF BUNBURY (1847-1918). First Prime Minister of Western Australia. He was born and educated in Perth, and quickly established a reputation for himself as an explorer, leading overland expeditions first to Adelaide and then to Port Darwin. For this work he received many honours and was granted 5000 acres from the Imperial Government. He was appointed to several offices, and in 1883 was Commissioner of Crown Lands and Surveyor-General, with a seat in the executive and legislative councils. On the introduction of responsible government, he became Prime Minister and Colonial Treasurer of the colony, holding these offices for eleven years. During that period he took a leading part in developing the colony. On the formation of the Federal Government he became Federal Postmaster-General, and subsequently he became Minister of Defence (1901-3), Minister of Home Affairs (1903-4), Treasurer (1905-7), acting Prime Minister (1907), Treasurer (1909-10), and Treasurer again (1913-14). He was once more made Treasurer in the Hughes ministry of 1917, but retired in 1918. He was made a peer in February, 1918.

FULLER, SIR GEORGE WARBURTON (born 1861). Lawyer and statesman. He was educated at Kiama Public School and Sydney, and entered politics in 1889, being twice returned for short periods to the New South Wales Parliament. He was elected to the first three Federal parliaments, and



THE FLINDERS RANGE

Typical scenery about 350 miles north of Adelaide.

Photo: Australian National Travel Association

was Minister for Home Affairs in the Cook-Deakin government of 1909-10. On the



SIR GEORGE FULLER
Photo. Photopress

Tariff Commission he represented Free Trade interests of New South Wales. He was Acting Premier and Chief Secretary of New South Wales from 1916 to 1920, and was Prime Minister of New South Wales from 1922 to 1925. From 1928 to 1931 he was Agent-General for New South Wales.

GEELONG. A city of Victoria 45 miles by land from Melbourne. Situated at the head of Core Bay it is an important wool port. It is noted also for its textile industry. Population 39,400.

GEOLOGY. The geology of Australia is the story of an ancient continental block subjected to earth-movements which have truncated it or been the cause of great sea invasions, without, however, essentially modifying its compactness and unity. The original block of Archean rocks was throughout long ages diminished on all its coasts, particularly the eastern and western, by extensive fracturing and subsequent foundering; the Great Barrier Reef, for instance, marks the ancient eastern edge of the continent. At a very early period the whole land was folded, but denudation long since wore down the fold-mountains into a great

plateau, which was then acted upon by purely vertical earth-movements of elevation and subsidence. The most dominant of these movements has been that sagging of the central portion which has resulted in the marine transgressions that, by creating the Central Lowlands, divided the original plateau into three parts, separating the geologically similar Eastern Highlands from



GEELONG GRAMMAR SCHOOL
Photo. Australian National Travel Association

the Western Plateau. It is in the Central Lowlands that we trace the successive invasions and retreats of the sea. Already in Cambrian times there had been a narrow sea extending across Central Australia, as the Cambrian rocks found at Kimberley, in the MacDonnell chain, and in northern Tasmania indicate. The greatest marine transgressions, however, took place in Cretaceous and later Tertiary times, when from north and south vast seas spread over inland



HERON REEF AND HERON ISLAND, CAPRICORN GROUP, GREAT BARRIER REEF
The pools of the reef teem with brilliantly coloured fish and coral. Palm, mangrove and other vegetation grow luxuriantly. This typically Australian physical feature fringes the coast of Queensland for about 1200 miles.

Photo. Agent-General for Queensland



CRATER LAKES AT MOUNT GAMBIER, SOUTH AUSTRALIA

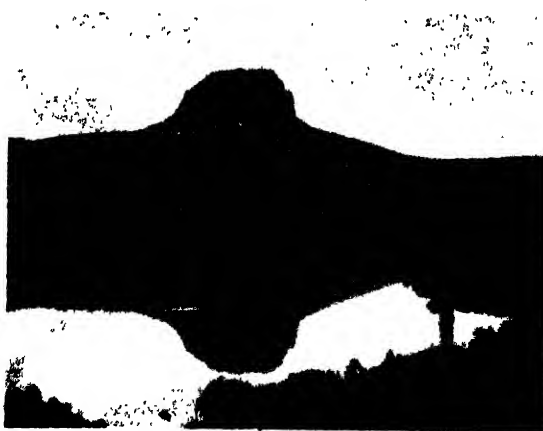
Photo: Australian National Travel Association

tracts of what are now the Central Lowlands. These seas advanced either from the Australian Bight or from the Gulf of Carpentaria. They laid down the sandstones and blue clays of the Great Artesian Basin and the limestones of the Nullabor Plains, just as earlier invasions had deposited the limestones of Victoria and New South Wales. The Tertiary seas were accompanied by volcanic outbreaks in the coastal regions and the outpouring of lava along points in the Great Dividing Range, and it is probable that volcanic activity persisted in Western Victoria till some time after the coming of the aborigines. There was a relatively

recent elevation of the Eastern Highlands with which Tasmania was then connected, till the foundering of Bass Strait (where earth-movements are still in progress) separated it from Victoria.

The Western Plateau covers nearly two-

thirds of the continent. It is chiefly a massif of ancient rocks such as metamorphic schists, gneisses, and slates—with intrusions of igneous rocks (granite). This area, originally much folded, has been worn down into a plateau varying from 1000 ft. to 2000 ft., but there are old folded rocks in the MacDonnell Ranges (quartzite) and elsewhere.



BARN BLUFF

It is in the northern highlands of Tasmania.

Photo: Spurling

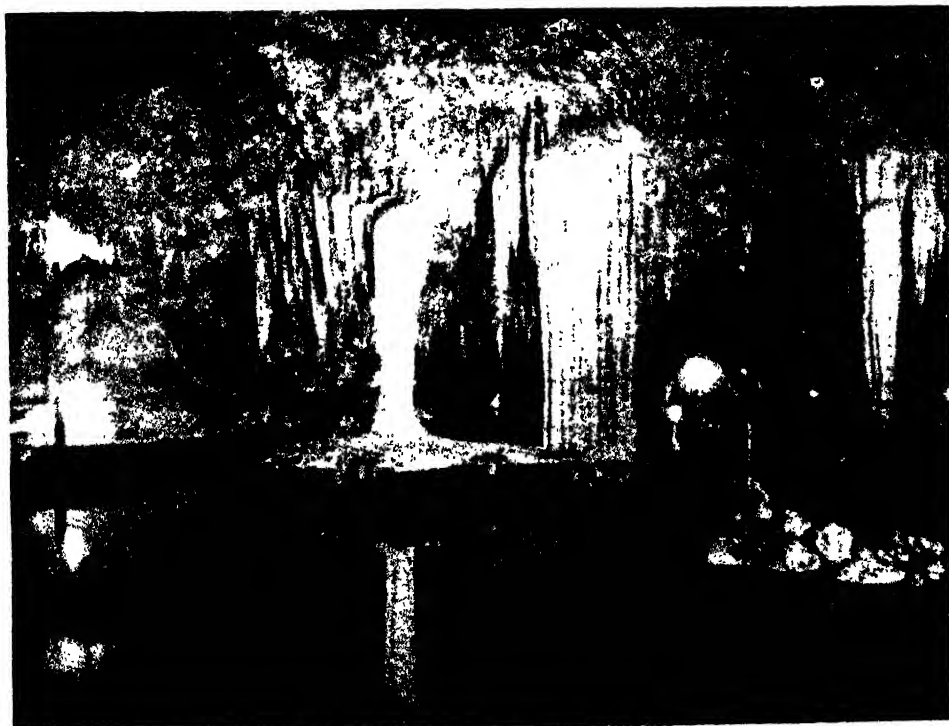
Granite erosion scarps and tablelands of harder rocks are characteristic, but the most interesting feature of this area is the occurrence of many auriferous lodes in the ancient rocks. It is claimed that the total auriferous belt of Westralia alone is in length 1500 miles and in width 300 miles. Up to October, 1935, the goldfields there had produced 41,218,498 oz. of gold, representing (it is estimated) the equivalent of £175,085,029, without taking into consideration the gold premium of £187,711,721.

In the south-east the ancient rocks have been overlaid by limestones deposited by the Tertiary sea invading from the Bight. These form the Nullabor Plains, with a thickness of 800 ft. and exposing cliffs of 200 ft. in southern aspect. In those times South Australia was probably quite 1000 ft. lower than to-day. In the S. A. Highlands we have ancient rocks crushed against the massif of the Western Plateau.

The chief feature of the Central Lowlands is the occurrence of great areas of softer deposits among uplands of Primary rocks. In the Eyre and Murray-Darling basins these deposits are partly Tertiary sediments

and partly later alluvial (gravel, clay, and loam), which in arid climates give rise to sand-dunes and the distinctive "gibber" plains. The Great Artesian Basin is the site of an inland sea which deposited porous Triassic and Cretaceous sands overlaid by impermeable blue clays. These sediments were subsequently folded in a shallow syncline, where the water collected in the porous sandstones is imprisoned by the superimposed blue clays and is to be released on boring. Of the artesian basins of Australia, the Great Artesian Basin is the largest and the most important; 450,000,000 gal. of water a day are yielded by its flowing bores alone. The majority of these are in Queensland (1000), but there are 500 in New South Wales and 200 in South Australia. Water is struck at a depth varying from 10 ft. to 6000 ft., and issues at a high temperature (72° F. to 212° F.). It is still contested whether this water is meteoric or plutonic, that is, derived from percolation or from igneous rocks. Probably it is an accumulation from both sources that must some day be in danger of exhaustion.

The Eastern Highlands consist of older



IN JENOLAN'S LIMESTONE CAVES

These are situated to the west of Sydney in the Blue Mountains. The limestones of the south-east were deposited by the Tertiary sea invading from the Great Australian Bight.

Photo: Australian National Travel Association

rocks of the Palaeozoic period, with intrusive granites. Here was the most recent folding in the continent. The region, after being worn down to a peneplain, was again elevated with considerable faulting; and the coal—deposited after the main folding took place—lies mainly in basins amongst older rocks. The largest of these basins is that of New South Wales, where the coal is worked mainly at the outcrops. In this basin alone there are reserves of coal approaching 20,000,000,000 tons, and the probable reserves, other than those definitely known, are likely to be four times as much again. Other coal basins are found in Queensland, Victoria, and Tasmania. The lowlands behind Sydney are Triassic sandstone under which are the principal coal measures.

The highest land in Australia is found in the Monaro Plateau, where we have a tableland flanked by granite. There are many evidences of recent glaciation in the Snowy Mountains (Kosciuszko) as well as in the highest parts of Tasmania.

GIPPS, SIR GEORGE (1791-1847). Governor of New South Wales from 1838 to 1846. On his appointment he was confronted by labour difficulties. Although unemployment was severe in the towns, caused by a drought and a financial crisis, labour was loth to work for the squatters whose rates of wages were low. The first representative council, elected in 1843, objected strongly to the Governor's control of the land fund, half of which was spent on assisting immigration and the other half of developing and policing the country. This and other matters of administration created constant conflicts between the Council and the Governor. He had also considerable trouble with the immigrants who desired a system of free land-grants. His unpopularity was increased by his act of hanging eleven white men who had massacred more than forty natives, for this was not then generally regarded as murder. History has proved him to be a far-sighted and able administrator, holding a balance between the views of the home authorities and the desire for greater freedom on the part of the settlers.

GOULD, HON. SIR ALBERT JOHN (born 1847). Former President of the Federal Senate. He was born at Sydney and educated at Paramatta and Sydney University. He was elected M.P. for Patrick's Plains, and became Minister for Justice from 1889 to 1891 and again from 1894 to 1898. From 1901 to 1917 he was a Senator for New South Wales in the Commonwealth Parliament, and for three years, 1907 to 1910, was the President. He has been Chancellor of the Archdiocese of Sydney, and at one time commanded the New South Wales Infantry. He is Chairman

of the Commonwealth General Assurance Corporation, Ltd., and holds directorships in many other undertakings.

GOVERNMENT. See AUSTRALIA, Vol. I
GRAINGER, PERCY ALDRIDGE (born 1883). Australia's most famous pianist and composer. Born at Melbourne; his father was a well-known architect and engineer. He studied music with his mother and Louis Pabst in Australia until he was 10 years of age, and then went to Germany, receiving his education at Frankfurt-on-Main. He went to London at the age of 17, and since then he has given hundreds of concerts in all parts of the world. In later years he has devoted himself to composition, and he has written much for piano, voice, chorus, and orchestra. He has taken a special interest in English folk-songs and Australian native music.

GREEN, ALBERT ERNEST (born 1869). Statesman. He was born at Avoca, Victoria, and in his youth travelled extensively in North, South, and Central America. He returned to Australia in 1895. In 1911 he was elected to represent Kalgoorlie in the Legislative Assembly for Western Australia, and in 1922 became member of the House of Representatives. In 1923 he was a member of the Select Committee to investigate the effect of the Navigation Act on Trade, and in 1925 he was a member of the Royal Commission on National Insurance. He was Minister for Defence in 1929-31, and Postmaster-General and Minister of Works for the Commonwealth in 1931.

GRIFFITH, SIR SAMUEL WALKER (1845-1920). First Chief Justice of the High Court of Australia. Born at Merthyr Tydvil, he was taken to New South Wales by his parents when nine years old. He was educated at Sydney University and was called to the Queensland Bar in 1867. In 1871 he entered political life and three years later became Attorney-General for Queensland. From 1883 to 1888 he was Prime Minister, and after once more holding the premiership in 1893 he retired from politics to become Chief Justice. For three short periods he acted as Lieutenant-Governor. He became an authority on constitutional law, and in 1903 he was made Chief Justice for the Commonwealth, retiring in 1919.

GROOM, SIR LITTLETON (1867-1936). Former Federal Attorney-General and Speaker of the Australian House of Representatives. Born at Toowoomba, Queensland, and educated at Melbourne. In 1891 he was called to the Bar and made K.C. in 1923. He became member for Darling Downs in 1921, and represented that constituency until his death, excepting the short period of 1929-31. He held office on many occasions,

being Attorney-General (1906-8), Minister for External Affairs (1909-10), and Minister for Trade and Customs (1913-14). From 1917 to 1925 he was continuously in office, being Vice-President of the Executive Council, Minister of Works and Railways, and then Attorney-General. He represented the Commonwealth at the League of Nations Assembly in 1924, when he was created a K.C.M.G. From 1925 to 1929 he was Speaker.

GULLETT, SIR HENRY SOMER (born 1878). Assistant Minister. He was born at Harston, Victoria, and engaged in farming before



SIR HENRY GULLETT
Photo. Photopress

taking up journalism. He served on the Sydney *Morning Herald*, and was London correspondent for the Sydney *Daily Telegraph* and Sydney *Sun*. During the World War he was Australian Official Correspondent with the British and French Armies in France, and after having in 1916 enlisted for active service he was, in 1918, appointed Official Correspondent with the Australian Forces in Palestine. He was Minister for Trade and Customs for the Commonwealth, 1928-29, and again in 1932-33. He has been Assistant Minister since 1934. He is the

author of Volume 7 of the Official History of Australia in the War, and has written many books on migration.

HARGRAVES, EDWARD HAMMOND (1816-1891). One of the first discoverers of gold in Australia. He emigrated to Australia in 1834 and lived at different places, including Illawara and Gosford, for about fourteen years. Disgusted with the poor results that he had obtained from grazing, he sailed to California, to take part in the gold-diggings. His experiences there led him to believe that gold must lie in Australia. He returned to New South Wales in 1851, and discovered gold on a wide area in the Macquarie valley. He revealed his discovery to the authorities, being paid £500, and within three months gold digging and prospecting were in full operation. In 1853 Hargraves was appointed Commissioner of Crown Lands. He was granted £10,000 by the New South Wales legislature and £2381 by Victoria. Later he made unsuccessful attempts to find gold in Western Australia and Tasmania.

HAWKESBURY, RIVER. A river of New South Wales about 335 miles long. In various parts it is known as the Wollondilly, Goulburn, Warragamba, Nepean. It enters Broken Bay.

HIGGINS, SIR JOHN MICHAEL (born 1862). Metallurgist. During the World War he was Metallurgical Adviser to the Commonwealth Government, Government Representative on zinc and copper producers' associations, and Chairman of the Commonwealth Central Wool Committee. For his services he was made a K.C.M.G. in 1918.



UPPER HAWKESBURY RIVER

Photo: Australian National Travel Association

From 1921 to 1926 he was Chairman, in Australia, of the British-Australian Wool Realization Association, Ltd.

HINKLER, HERBERT JOHN LOUIS (1892-1933). Famous airman. Born at Bundaberg, in Queensland. Between 1911-12 he built



HERBERT HINKLER
Photo: Fox

a number of gliders in which he made successful flights, and during the World War he served in the Royal Flying Corps. In 1921 he returned to Sydney with a machine and flew non-stop to his home town. He accompanied the British Schneider Trophy team to America in 1925 as a pilot. In 1928

he lowered the record from England to Australia from 28 to 15 days, and in December, 1931, he flew from New York to London by way of Brazil and West Africa. In January, 1933, he left England on a fast flight to Australia, but he crashed in the Apennines.

HISTORY, AUSTRALIAN. See AUSTRALIA, Vol. I, and separate articles on the Australian States.

HOBART. See TASMANIA, Vol. VIII.

HOGAN, EDMUND JOHN (born 1884). Labour Party leader. Hogan was born at Ballarat and worked on roads and farms and in lumber camps. In 1903 he went to Western Australia and was in the timber industry for several years, becoming, from 1908 to 1911, treasurer of the Timber Worker's Union.

Hogan took an active part in Labour Party politics, and in 1920 became Vice-President of the Victorian branch of the Australian Labour Party. In 1922 he was President. He held ministerial office in 1924, and in 1927-28 and 1929-32 was Prime Minister of Victoria.

HUGHES. RT. HON. WILLIAM MORRIS. See article, Vol. IV.

HUNTER, JOHN (1737-1821). Governor of New South Wales from 1795 to 1800, best known for his services as a surveyor and his encouragement of the explorers Bass and Flinders, as well as for his encouragement of the founding of the wool trade. He was, however, a weak administrator. The military were in full control and assumed privileges which Hunter tried in vain to restore to the civil powers. Officers abused their trading rights and were excessive in their charges. They had become trade monopolists, usurers,

and spirit distillers, and had taken into their personal service more convicts than were permitted.

Hunter was also in trouble with the colonial office because of his inability to keep down expenses. After his recall in 1800 he asked for an inquiry, but this was denied. In 1808 he was invited to accept the governorship again, but refused.

INDUSTRIES. Shearing-sheds and gold-fields sum up the early days of industry when Australia began business by turning natural resources to account and exporting primary products.

After wool and gold, wheat was added to the stock-in-trade; then butter, fruit, and other agricultural products. Wool is still the greatest single industry, but to-day a far smaller proportion of the population is concerned with the production of it than in the days before the turn of the century. The secondary industries to-day employ (according to the 1933 census) 541,000 persons; the primary industries 656,000. The gross value of the total output of Australian factories amounted in 1933-34 to more than £330,000,000, and the net value (the value added by manufacture) to £129,092,000. For the same year the total net value of Australia's primary production was £169,082,297.

Those primary industries which produce for export have already been dealt with in some detail in the article on trade (which see).

Chief among them were wool, wheat, butter, gold, meat, hides and skins, and fruit. Wool and silver-lead ores are produced mainly for export, the others partly. To these must now be added certain raw materials produced almost entirely for the home market: iron, coal, cotton, copper, tin, vegetable and animal oils, and certain chemicals for fertilizers. Agricultural, pastoral and dairying industries combined employ 548,000 persons. Mining and quarrying industries employ 68,000. See AGRICULTURAL AND PASTORAL INDUSTRIES

How the Factories Came. The first flush of gold fever in New South Wales quickly spread to Victoria, and brought teeming hordes of British and foreign adventurers into the country. Nineteen thousand of them landed in Melbourne in September of 1851, and 94,000 during the following year.

"So long as gold was still to be had for the mere labour of digging it with pick and shovel, it was easy to maintain the great goldfields population," writes Mr. Ambrose Pratt, Editor of the *National Handbook of Australian Industries*. "But immediately the deposits were depleted, Government was faced with the problem of providing employment for tens of thousands of men who were



INDUSTRIES

It needed two real afflictions to give industries the fillip which brought them to the present level of production: these were the World War and the world economic depression. There are now more than 23,000 factories employing over 400,000 persons. 1. Wine stored in casks at Seppeltsfield, South Australia. In 1924 under 900,000 gallons were shipped; in 1935 this had risen to over 3,000,000 gallons, 95 per cent goes to Britain. 2. Smelters at Port Pirie. War shortage of iron and steel produced an industry which by 1921 made 220,000 tons of steel ingots annually. In 1935 nearly 700,000 tons made. 3. Cockatoo Island, Sydney, New South Wales, the outstanding centre for shipbuilding: vessels up to 550 ft. in length and 64 ft. in breadth can be constructed here. 4. Mount Burr sawmill timber yard, South Australia. Timber is an important export. 5. Machine shop at Walsh Island, New South Wales. Motor cars, agricultural machinery, and mining and smelting machinery are important products of engineering.

Photos: Australian National Travel Association; Government of South Australia; Government of New South Wales

totally unfitted to engage in the pastoral and agricultural industries. Victoria attacked the problem by enacting a protectionist tariff (1865) which fostered into being a number of secondary industries."

A similar kind of backward flow from the goldfields helped to create a need for factory employment, though on a much smaller scale,

when the rich deposits of Western Australia began to be exhausted from 1904 onwards.

For many years, however, the scope of manufactures remained very limited, being confined chiefly to the preparation of foods, the weaving of woollen and worsted cloth, manufacture of clothing and furniture and processing of raw materials. It

remained for two real afflictions to give the nascent industries the fillip which has brought them to their present level of production. The first of these was war, the second was world economic depression.

During the War, Australia suffered by her dependence on overseas supplies of heavy metal manufactures—iron and steel, machinery and plant and railway materials. The result is described by Mrs. Windett in her book *Australia as Producer and Trader*. "The rolling of steel was accordingly begun and output on these lines increased rapidly. Continual extensions to plant and machinery were made and the output of steel ingots increased from an annual average of under

charges, which then had to be met from exports, automatically reduced imports by a quarter. Further, the fall of export prices, unbalanced by a corresponding fall in import prices, cut off another quarter of the old imports. The combined effect is now the dominating influence on industrial development."

The result to date of these three stages of developments is that Australia now has more than 24,000 factories employing nearly 450,000 persons, who receive total wages of more than £72,000,000 a year.

These factories reached their peak output in 1928-29, when the total value aggregated £420,445,000. The decline which then took place brought the figure down to £281,646,000 in 1931-32, after which there was a recovery, until in 1933-34 the total value of factory output stood at £330,134,000, a figure equivalent to 35 per cent of the total production of all Australian industry, primary and secondary. Allowing for the change in price levels between those years, the volume of factory production is possibly as great now as it was in 1929.

What the Factories Make. Contributing to this total of roughly £330,000,000, the most important group is that engaged in the preparation of food, drink, and tobacco. It accounts for one-third of the aggregate value, namely, £110,000,000. Next to the preparation of food, etc., comes the group comprising industrial metals, machines, implements, and conveyances, the aggregate output of which is given as £71,887,620.

The groups next in order of importance, and of great significance to the United Kingdom exporter, are (1) textiles, the total production of which in 1933-34, at £22,113,323, stood alone in showing an advance in value on 1929-30; and (2) the allied group comprising clothing, with a total output in 1933-34 of £26,909,500. An examination of the various branches of these groups reveals clearly the great extent of the competition that Australia offers to the industries of the United Kingdom. The year 1930 stands out as one of great expansion in the wool textile industry, thanks not only to high protective import duties, but also to the influence of the exchange. Local manufacturers' greatly extended the range of their output, notably in the direction of lightweight dress material.

The leading lines made in 1933-34 were: tweed and cloth, 23,280,000 sq. yds. (value £4,125,000), as compared with less than 10,000,000 sq. yds. annually in 1927-30; flannel, 9851 sq. yds. (value £902,700); blankets, 583,239 pairs (value £541,177); and rugs and shawls, 221,818 (value £124,322).

The hosiery and knitting mills used during the year 5,910,309 lb. of woollen yarn,



SALT WORKS AT LOCHIEL
Photo: Government of South Australia

10,000 tons before the War to 220,000 tons in 1921-2. The difficulties entailed in importing goods created opportunities for the establishment of a number of other manufacturing industries and for the extension of operations in older industries, particularly textiles."

The effect of the depression which began in 1929 was not so direct, but it was hardly less powerful. In this case the reduction of imports and the consequent increase of local manufactures was due to a change in the position regarding interest on overseas debts. (These debts and their effect on trade are discussed in some detail in the article on Australian trade.) The change is summarized by Professor L. F. Giblin, of the University of Melbourne—

"Interest and dividend on foreign investment were (before the depression) a first charge on exports, but for most years, and particularly for the years 1920-28, new loans from abroad were big enough to cover debt charges and the whole value of exports could be taken out in imports. Imports soared to £140,000,000 sterling in the last decade. But with the depression, overseas investment ceased and the external debt



MINING

1. Iron Knob, South Australia, from which comes the principal output of iron ore. The hill has an average iron content of 63 per cent and the maximum output (reached in 1930 in conjunction with Middlebank) amounted to over 928,000 tons. 2. Iron ore being loaded by mechanical shovel at Iron Knob. 3. Lake View and Star Mine at Boulder, Western Australia, which state in 1935 ranked second in the production of minerals. 4. A diamond drill in use in a coal mine. There are mines in all states save South Australia; New South Wales heads production. 5. Broken Hill Works, Newcastle, New South Wales. The name Broken Hill is synonymous with silver-lead-zinc, of which it is the world's largest source.

Photos: Agent-General for New South Wales; Agent-General for Western Australia; Australian National Travel Association; South Australian Government

4,995,387 lb. of cotton yarn, 591,008 lb. of silk, and 4,936,343 lb. of rayon.

Heavy Industries. The heavy industries of Australia are mainly founded on the activities of the Broken Hill Proprietary Company, of Newcastle, New South Wales, which controls its own sources of ore, limestone, and coal, owns a fleet of vessels, and has established a network of subsidiary industries.

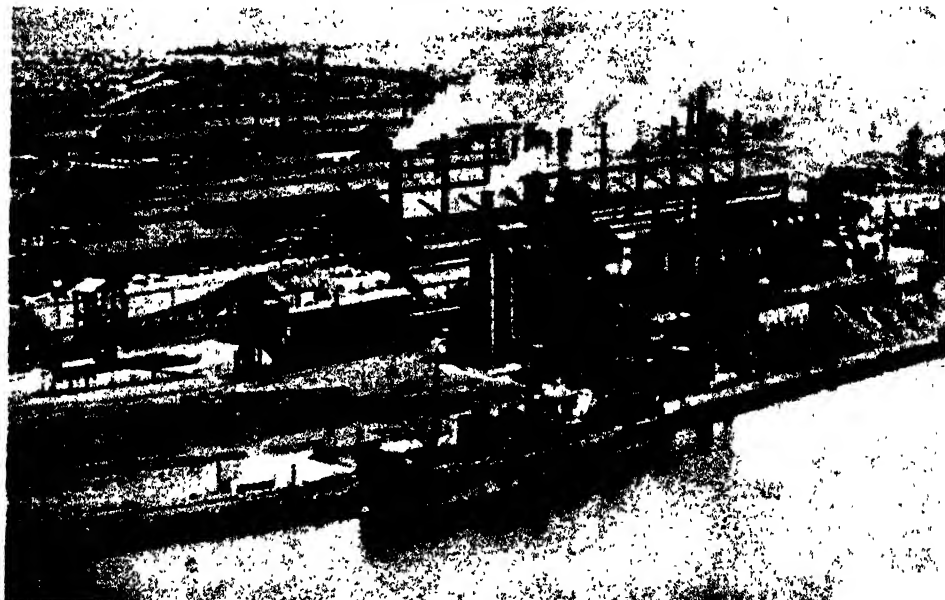
In 1935 the company produced a record output of steel ingots—552,710 tons in all—

costs sufficiently to enter the export field in the East with motor-bodies.

A leading branch of the engineering industry is that producing agricultural machinery and implements.

Another noteworthy direction in which engineering is progressing is the manufacture of mining and smelting machinery. This section has benefited by the renewed activity of gold mining since the depression.

Among Australian enterprises which have undertaken shipbuilding, that at Cockatoo



STEEL WORKS, NEWCASTLE, NEW SOUTH WALES
Newcastle is the largest centre of the heavy industries of Australia.
Photo: Government of New South Wales

a figure which exceeded by 138,486 tons the output of any previous year. Associated with this concern are many household names in the heavy industries of the United Kingdom, whose branch or associated works are turning out every class of steel wire, steel rope, galvanized, corrugated, and plain steel sheets, and forged, rolled, cast, and pressed steel products in carbon and alloy steels. While these particular activities are centred around Newcastle and Port Kembla, there are plants for the fabrication of steel at a number of other important centres

The industry of motor-body building and motor-car assembly was one of the first to recover after the depression, and there are now works run on mass production lines. These have been able to reduce operation

Island, Sydney, is outstanding. There it is possible to build vessels up to 550 ft. in length and 64 ft. in breadth, complete with fittings and equipment. The adjoining engineering shops are designed for the production of reciprocating and turbine machinery, boilers, large forgings, castings, and structural steel work. There are machine shops equipped with modern lathes, boring mills, and gear-shaping machines.

Shipbuilding is undertaken also by Walkers Ltd., of Maryborough, a concern which had its roots in the Queensland mining and sugar industries. It has branched out until it now covers nearly every side of engineering, including the construction of locomotives and rolling stock, pumping plants, refrigeration equipment, winches and winding engines, and copper smelting and converting plant.

Another long-established engineering concern is that of Thomas Sutcliffe Mort, established at Sydney over eighty years ago, as a graving dock, and now extending to the construction of steamers dredgers, tugboats, coal-handling plant, electrical machinery, and condensing plant. A number of United Kingdom electrical engineering concerns have branch factories.

Railway rolling stock and equipment, including tank wagons, are made at Brisbane, where heavy drop forgings and other large engineering requisites are also turned out. Gears and heavy machinery are made at Melbourne, where contracts have been carried out for crushers, coal loaders, cranes, sluice valves, helical gears, and rubber-extracting mills. Another foundry at Rockhampton furnishes mining machinery, artesian well-boring plant and water-pumping installations.

The transmission towers for the State electricity scheme in Victoria and the Tasmanian hydro-electric scheme were made in Melbourne, and undertakings in that city have carried out not only many other contracts for structural steel, but also contracts for lifts and hydraulic presses and appliances. At Adelaide there is established a branch factory of a well-known American refrigerator concern. A Brisbane manufacturer has supplied cast-iron pipes and sewerage fittings to most of the principal towns in Queensland. Wrought-iron tubes for gas, water, and steam are made at Sydney.

Cement works flourish in the Commonwealth. Fertilizer production is also an important industry. Two other branches of activity should be mentioned, although not perhaps coming within the definition of heavy industries. One is glass manufacturing. The other covers the wide ramifications of Imperial Chemical Industries of Australia and New Zealand Ltd., which makes ammunition, high explosives, safety fuse, lightning fasteners, leathercloth, rubber cloth, etc.

Individual Industries. Following are details of individual industries. In each case the first figure represents the number of factories engaged in the industry; the second represents the total value of output for the year 1933-34.

Tanning, currying, and leather dressing—153; £4,110,056. Soap and candle factories—71; £2,696,606. Saw-mills, forest and other; plywood and bark mills—1276; £7,211,573. Agricultural implement works—138; £1,766,707. Engineering works—822; £7,155,004. Smelting, converting, refining, and rolling of iron and steel—427; £15,038,062. Tramcars, railway rolling-stock, carriages, etc.—109; £9,906,428. Extract-

ing and refining of non-ferrous metals and alloys—34; £11,504,946. Bacon curing factories—73; £3,296,957. Butter, cheese, and condensed milk factories—531; £20,809,678. Meat and fish preserving works—45; £7,439,848. Bakeries (including cakes and pastry)—1490; £8,112,563. Jam and fruit preserving, pickles, etc., factories—120; £4,634,959. Sugar confectionery factories—214; £4,734,105. Grain milling—170; £11,391,822. Sugar mills—36; £10,840,097. Breweries—42; £5,625,876. Tobacco, cigar and cigarette factories—31; £6,894,327. Woollen and tweed (including wool-scouring) mills—98; £11,635,920. Boot and shoe factories—309; £6,395,859. Tailoring and slop clothing factories—1040; £7,627,067. Dress-making establishments—670; £3,346,011. Millinery establishments—142; £952,988. General printing and bookbinding—931; £6,911,683. Establishments producing newspapers and periodicals—441; £5,624,543. Assembling and repairing of motor vehicles and cycles—2346; £3,750,317. Motor body building—170; £2,917,734. Furniture, cabinet-making and upholstering factories—776; £3,546,260. Electric light and power works—386; £2,343,806. Gas works—109; £4,666,460.

Branch Factories. Mention has already been made of a few of the branch factories established by British firms in various parts of the Commonwealth. In variety of manufacture and volume of output, these "transplanted" concerns play a prominent and important part in the economic life of Australia.

Instead of withdrawing from a good market and losing their valuable connections, or challenging Australia's fundamental right to provide employment for her own people with necessary protective duties, these British industrialists accepted the inducement to manufacture behind the shelter of the Australian tariff.

In every case they have been welcomed, not only by the purchasing public, but also by existing manufacturing interests of the Commonwealth.

ISAACS. SIR ISAAC ALFRED (born 1855). The first Australian-born citizen to become Governor-General of the Commonwealth. He was born at Melbourne and educated at Bechworth Grammar School and Melbourne University, graduating as a scholar in Law. He was admitted to the Victorian Bar in 1880, becoming Queen's Counsel in 1899. He was a member of the Victorian Legislative Assembly from 1892 to 1901, and during that period was Solicitor-General (1893), Attorney-General (1894 and 1900), and in 1897 a member of the Australian Federal Commission which framed the

Commonwealth Constitution, and of the Royal Commission on Parliamentary Procedure (1894). From



SIR ISAAC ISAACS
Photo: Fox

1901 to 1906 he was a member of the House of Representatives of the Commonwealth Parliament, and he became Attorney-General in 1905. In the following year he was made a Justice of the Australian High Court, and for two years, 1930 and 1931, he was Chief Justice. He was appointed Governor-General of Australia in 1931, an office which he held for four years.

KANGAROO.

See article, Vol. V.

KENDALL, HENRY (1841-1882) One of Australia's greatest lyric poets. He was born at Kirmington, N.S.W., and after a short period as a cabin-boy, he worked in a carpenter's shop in Sydney. There he commenced to write verses which were published in the *Australian Home Companion*, the *Empire*, and the *Sydney Morning Herald*. In 1862 a number of his poems were printed in the *Athenaeum*, and in the same year a volume was published in Sydney. He was given a government sinecure, and in 1868 won a prize at Melbourne for the best Australian poem. He resigned his government appointment in 1869 and for a time suffered intense hardship, but in the succeeding years he wrote "Orara," "After Many Years," and other famous Australian verses. In 1881 he accepted another government position.

KING, PHILIP GIDLEY (1758-1808). Administrator. A native of Launceston, Cornwall, he joined the navy and, in 1788, was appointed superintendant and commandant of the settlement to be established at Norfolk Island. He was sent to the island with nine male and six female convicts, and superintended the cultivation of the soil. In 1793 the population had grown to 1000 and the community was producing all its own food requirements. In 1802 he became Captain-General and Governor-in-Chief of New South Wales. His administration, however, was carried on under considerable difficulties, due to repeated quarrels with officers of the New South Wales Corps, and the presence of Irish convicts sentenced for political offences. He resigned in 1806.

KINGSFORD-SMITH, SIR CHARLES EDWARD (1897-1936). Famous airman. Born at Hamilton, Brisbane, he was educated at St. Andrews, Syd-

ney, and Sydney Technical School. After serving in the Australian Signal Engineers, he was transferred to the Royal Flying Corps, in which he earned the M.C. After 1919 he engaged in commercial flying. Some of his most famous flights were "Southern Cross"—first trans-Pacific flight (1928), first return flight to New Zealand (1928), Australia to England (1929), Ireland to America (1930), England to Australia in 10½ days, creating a record (October, 1930), and England to Australia in 7 days 5 hours, making another record (1933). In 1936 his plane was lost in the Indian Ocean when he was attempting to break the record between England and Australia.



SIR CHARLES
KINGSFORD-SMITH
Photo: Fox

KOALA. See article, Vol. V.

KOOKABURRA. See article, Vol. V.

LAKE EYRE. A lake bed some 3700 sq. miles in area in South Australia. Usually it is completely dry, but at times it receives the outflow of a number of streams which rise in the Stuart, Dennison, and other mountain ranges on the rare occasions when they are fed by heavy rains. Even when the rivers are in flood Lake Eyre rarely becomes more than a vast marsh with patches of standing water.

LANE, WILLIAM (1861-1917). A religious socialist, and one of the founders of the Australian Labour Federation. He was born in Bristol, and worked in Canada and the United States as a journalist, migrating to Australia in 1885. He worked on papers in Brisbane and in 1890 established the *Queensland Worker*, the first Labour paper in Australia, based on the motto "Socialism in Our Time." In 1889 he was one of the prime movers in the creation of the Australian Labour Federation, and he helped to raise £30,000 to assist the London dockers' strike of 1889-90. He founded the New Australia Co-operative Colonization Society with the object of the creation of a Utopian State in Paraguay, where he had been promised 450,000 acres of good land. The society was

to be based on communal ownership. More than £30,000 was raised, and he and his disciples pooled their wealth, Lane himself giving £1000. In 1893 they sailed in the *Royal Tar* for Paraguay, 209 passengers and a crew of 32, all members of the Association. Trouble, which broke out on the ship, assumed serious proportions after the settlement was founded, and most of the settlers had to be repatriated to Australia. On the arrival of a second party, Lane was deposed, and he and a group of forty-five adults settled elsewhere. In 1899 he abandoned the task and returned to Australia and founded the *Sydney Worker*. By his support of the Boer War he lost his popularity in socialist-labour circles, so he severed his connection with Australian Labour politics. He then joined the staff of the *New Zealand Herald*, and worked strenuously in an attempt to repay all who had lost moneys in his ventures.

LANG, JOHN DUNMORE (1799-1878). A great Presbyterian teacher. He was born at Greenock, in Scotland. He arrived at Sydney in 1823, and held services in the court-houses, placed at his disposal by the Governor. In 1824 the foundation stone of the Scots church on Church Hill was laid. The Church was opened in 1826, and Lang was its minister for fifty-two years. After having succeeded in establishing his church, he built a new college which was completed in 1835.

For a long time Presbyterians in Australia were badly divided, but the sect re-united in 1840 under the title of the Synod of Australia

in connection with the Established Church of Scotland; but even after this Lang was in constant antagonism with local Presbyterians, differences not being finally settled until 1863.

Lang did much to encourage immigration; and was a vigorous advocate and writer on behalf of more liberal franchise, land reform, improvements in the methods of Parliamentary procedure, etc. In 1872, the year of his ministerial jubilee, he was made Moderator of the General Assembly of the Church in New South Wales.

LANGUAGE. The Australians speak and write the English language solely. There is no bi-lingual system as in Canada and South Africa. The proportion of foreign elements in the population—a few Germans, French, and Italians—is so small that there has never been a demand for elementary education in any other language than English, nor for acceptance of any other tongue in the law courts.

It is a fairly common criticism—a criticism usually resented—that Australians speak the King's English with a somewhat pronounced accent, resembling the accent of the London cockneys. It is true, as regards a great proportion of the population; though not universally true, and it can be said that the seven millions of Australians speak a purer tongue than would seven millions of British people drawn from all parts of the Kingdom. There is in Australia an almost complete absence of "dialect," and the misuse of the aspirate is rare. The English language, as spoken commonly in Australia, is



ADELAIDE PLAINS FROM MOUNT OSMOND

Founded in 1836, Adelaide is the capital of South Australia and the third largest city in Australia.

—Government of South Australia

much embellished—or spoiled, as the view may be—by slang terms, mostly legacies of the old gold-digging and pioneer-settling days.

The Australian speech has derived very little from the aboriginal Australian language which was, in truth, hardly a formed language, but one in the "agglutinative" stage. Place names in Australia have preserved some indigenous words, though even in regard to these the caution has to be given that many obviously represent the effort of the aboriginal to translate a white man's term into his own liquid and plentifully vowelled tongue. Distinctly melodious are some of these native names, such as Bondi, Coogee, Warrabee, Waiatara, Woolloomooloo—all Sydney suburbs. (Murrumbidgee, Wagga-Wagga, Terry-hi-hi are, perhaps, native transmutations of English terms.) A few aboriginal animal and weapon names have come into common English use, such as kangaroo and boomerang.

LATHAM, SIR JOHN GRIEG (born 1877). Barrister and politician. He was born in Victoria and educated at Melbourne University.



SIR JOHN LATHAM
Photo: Photopress

At various periods he was lecturer in Logic and Philosophy, and in Law of Contracts and Personal Property. From 1922 to 1934 he represented Kooyong in the Commonwealth Parliament, and during that period was Attorney-General (1925-29), Minister of Industry (1928-29), Leader of the Opposition (1929-31).

Deputy Prime Minister and Attorney-General (1932-34). He then retired from politics and resumed his legal practice. In 1919 he was a member of the Australian delegation to the Peace Conference at Paris, British Secretary to the Allied Commission on Czecho-Slovak Affairs, and a representative of Australia at the League of Nations and the Imperial Conference of 1926. He also represented Australia at the Disarmament and Reparations Conferences of 1932; in 1934 he led the Commonwealth Delegation to the Dutch East Indies, China, and Japan.

LAUNCESTON. See **TASMANIA**, Volume VIII.

LAW. It is essential to any federal scheme of government that there should be a division of powers between the federation and its component parts. In the case of

the Australian Commonwealth, the powers of the Federal body are specified and enumerated, whilst those of the States are undefined and represent the residuary functions which remained with them after federation. In certain instances Federal and State powers are concurrent, but subject to the overriding authority of the Federal measure where Federal and State enactments giving effect to those respective powers conflict.

The legislative powers of the Commonwealth Parliament are enumerated to include taxation, currency and coinage, insurance and banking (other than State insurance and banking), bills of exchange and promissory notes, bankruptcy, insolvency, copyrights, trade marks and patents, naturalization and aliens, immigration and emigration, the influx of criminals, marriage, divorce, and matrimonial causes, foreign corporations, invalid and old age pensions, external affairs, external and inter-state trade and commerce (but so as not to affect the free movement of inter-state trade), postal and similar services, naval and military defence, public borrowing and other incidental powers. These are matters all of which call for general regulation and are administered more suitably by central than by local authority.

The jurisdiction of the States, being unspecified, is not confined to such narrow limits. It extends to cover all recognized principles of jurisprudence, and to regulate all matters which are either not within the competence of the federal authority or in respect of which federal action is competent concurrently with State action but has not been taken.

(1) **Public Law**. (a) **Constitutional Law**. This branch of the law defines the form of government, indicates the sovereign power in the Commonwealth and its component parts, and distinguishes the functions of legislature, executive, and judiciary. The Federal constitution is contained within the body of a written instrument. The principal features of Australian federalism are that definite powers are assigned to the Federal parliament, whilst the powers of government remaining continue with the State parliaments; the Federal and State parliaments can only legislate subject to the Commonwealth Constitution, and the Courts will treat as void any legislation which is *ultra vires* the Federal or State parliaments; the High Court of Australia has jurisdiction to determine the validity of Federal and State legislation and executive action; the Commonwealth Constitution can be amended only as therein provided or by an Act passed by the Imperial Parliament at the instance of the Commonwealth.

The sources of State constitutional law are inherited English law, certain Imperial statutes, the Commonwealth Constitution, statutes passed by the State parliament, decisions of the Courts, and a large element of convention, whilst the chief characteristics of the State constitutions are the office and constitutional powers of the governor, the State legislature and electoral system, the judicial system and recognition of municipal and local government. The powers and duties of the governor are regulated by statute, Imperial letters patent, and Instructions though certain discretionary powers attach to the office. Legislative power is vested in the Crown, as represented by the governor, acting on the advice of a legislative council and a legislative assembly. The bicameral system obtains in all States except Queensland.

(b) *Administrative Law.* The imposition of taxes and the collection of revenue (other than customs, excise and land tax which are federal matters) are concurrent powers shared by both the Commonwealth and States. The promotion of social welfare, such as provision for hospitals, asylums, prisons, and education is generally a matter for State regulation. Control of the armed forces of the Commonwealth, the government of its dependencies, and its representation in external affairs are exclusively within the powers of the Federal government.

(c) *Criminal Law.* Both Federal and State enactments have been passed under this heading. Criminal acts are enumerated and a penalty prescribed for their commission. The body of substantive law deals with the nature of the criminal act and the extent of responsibility and specifies punishment. In respect of certain offences, the written enactment is not always comprehensive, and recourse must be had to the Common Law. The Federal statute is primarily concerned with offences against the government and those relating to the coinage, whilst offences against the person are generally covered by State legislation.

(2) *Private Law.* In the domain of private as in criminal law, there are two main elements which underlie each of the Australian systems. The first to require notice is the "inherited" element, or that part of the contemporary English law which was brought to Australia by the first settlers. The tendency is towards its replacement by legislation, but it is of very considerable importance and must so remain. There is, in addition, the "statutory" element, described most conveniently as that body of statute law which has been developed locally or derived from legislation of the United Kingdom. Each of the States has sought by its

own legislation to regulate rights and define obligations. Where no regulation exists by statute it is found in Common Law.

It is not possible to give here an adequate conspectus of the substantive and adjective law of the various Australian legal systems. In view, however, of their origin and of their underlying elements, it is possible to indicate the uniformity of that law and to survey briefly those branches in which the inherited element has undergone considerable modification.

(a) *Property.* The chief characteristics of property in land are the doctrine of tenure, under which the ultimate ownership of land is in the Crown whilst its use and occupation is in the tenant, and the doctrine of estates which means that only a limited interest or estate in realty can be held. This was the English system of realty which was first introduced into New South Wales in 1788 and subsequently extended to the other Australian States. In its subsequent enactments each State aimed to assimilate its law of property to the law in force in England at the relevant times. There are at present important differences between the two systems.

The systems of title in Australia comprise (a) common law title, (b) title under the Torrens system, which is embodied in each of the State enactments, and (c) title under the various Crown Lands and Mining Acts. In the first connection, the system arose from the fact that with the introduction of common law principles, English methods of conveyancing became applicable to the various States. Local legislation has modified these methods, but a number of the basic principles remain. The Torrens system (which see) which has been adopted by each State, was based on the idea of applying (with modifications) to land and estates in land, the principles of registration which had been worked out in English merchant shipping legislation, with respect to British ships and shares therein. In essence, it is a system of registered titles and dealings. Upon registration the title becomes indefeasible (except in certain cases) and dealings therewith, which are effected by simple forms, are required to be registered. No instrument or dealing until registered is effectual to pass any estate or interest in land which is subject to the system, but an instrument on registration has the effect of a deed duly executed by the parties. Registration of a dealing consists in the entry of a memorial thereof in the register book and upon the folium constituted by the existing Crown grant or certificate of title.

The tenures contemplated by the Crown land and mining legislation of the various

States may be grouped broadly as arising from conditional purchases, leases, and licences; free grants; closer settlement leases, licences, and sales; mining leases and licences; sales by auction and special sales; and reservations and dedications. The most usual method of alienation is conditional purchase, the conditions generally requiring an initial deposit by the purchaser, a specified period of residence during the early stages of the purchase, improvements of a specified value and payment of the balance of purchase money over a period of years, usually thirty or more. Conditional leases are in general confined to regions which are more suitable for pastoral or mining work.

In the matter of personal property, the anomalies which previously placed it for certain purposes such as succession, in a widely different category to realty, have been largely removed. There are still, however, important distinctions between these two classes of property, particularly in regard to conveyance and assignment.

(b) *Bankruptcy and Insolvency.* The power of the Commonwealth to legislate with

respect to bankruptcy and insolvency, which are matters within Federal competence, derives from the Commonwealth Constitution.

The Commonwealth Bankruptcy Act came into operation on the 1st August, 1928. Its general effect was to supersede the various State enactments each of which had up to this time provided for the administration of a State bankruptcy system, and to establish a uniform bankruptcy law for the whole of the Commonwealth. For purposes of administration the Commonwealth is divided into specified districts each of which is under the supervision of a Registrar in Bankruptcy, an official receiver and other officers. The jurisdiction in bankruptcy is exercised by a Federal Court of Bankruptcy, and such other Courts as are invested with the federal jurisdiction.

The more important of the acts of bankruptcy upon which proceedings may be founded include an assignment for the benefit of creditors, fraudulent conveyance of property, fraudulent preferences, declaration of inability to pay debts, failure to satisfy a bankruptcy notice based on a final judgment,



PORT ARTHUR, TASMANIA

Tasmania, known first as Van Diemen's Land, was discovered by the Dutch navigator, Tasman, in 1642, and settled by a party of convicts from Great Britain in 1803. The ruins of buildings erected by them and those who followed can be seen. The convict system came to an end in 1853, when the name of the island was changed. Responsible government followed in 1856.

Photo: Agent-General for the Government of Tasmania.



GOVERNMENT HOUSE, SYDNEY
Photo Agent-General for New South Wales

and bankruptcy in another part of the British dominions. A debtor may be made bankrupt either on his own petition or on that of a creditor.

The effect of a sequestration order, which is made upon petition, is to make the debtor a bankrupt and to vest his property in the appropriate official receiver for division amongst creditors.

Provision is also made for compositions without sequestration under which the debtor may arrange with his creditors for the distribution of his assets with the same protection both to him and to them as would be afforded by bankruptcy, but without its stigma.

(c) *Winding up of Companies.* These provisions do not extend to cover the winding up of companies. This is a matter which is governed by the companies legislation of the various States.

(d) *Succession.* Matters of succession are within the residuary powers of the States in whose legislation there is, however, a certain uniformity. The grant of probate or administration is generally under the supervision of a superior court which maintains its own probate registry. Upon the grant all the real and personal estate of the deceased person vests, as from death, in his executor or administrator and is held according to the trusts and dispositions of the will, or in trust for the next of kin. In cases of intestacy the share of the estate to

which a spouse is entitled is defined, and provision is made for the distribution of the intestate's property among the next of kin. The powers of executors and administrators are definite and their exercise is subject to the supervision of the Court.

(e) *Matrimonial Causes.* Marriage and divorce, including matrimonial causes, are matters which its Constitution has placed within the legislative competence of the Commonwealth. Inasmuch as no Federal measure has as yet been enacted to regulate either of these subjects, they are still governed by the legislation of the various States. In all States marriage may be celebrated either by ministers of religion, whose names are registered for that purpose, or by certain civil officers. The latter are in most cases district registrars. In general, the jurisdiction in matrimonial causes extends to grant certain principal forms of relief, namely, dissolution of marriage, judicial separation, restitution of conjugal rights, nullity of marriage and jactitation, as well as incidental forms of relief such as alimony, maintenance and custody of children. The principal grounds upon which a marriage may be dissolved and which are available to either the husband or wife include adultery, desertion for the specified period, habitual drunkenness coupled with certain other conduct or facts for a specified period, and imprisonment in certain circumstances.

Statutory relief is also available in each

State to deserted wives and children. This covers the grant and enforcement of maintenance orders and analogous relief. In these instances the jurisdiction is vested in lower courts.

Administration of Justice. The chief elements of the Australian judicial system are (a) the High Court of Australia with original and appellate jurisdiction, (b) a comprehensive common law system of State courts with jurisdiction *inter alia* in equity, probate, divorce and admiralty, and (c) a number of minor and special courts of limited jurisdiction. Each State possesses its own judiciary and system of minor courts, whilst the judicial power of the Commonwealth is vested in the High Court (which functions also as a national Court of Appeal), a Federal Court of Bankruptcy and a Commonwealth Court of Conciliation and Arbitration.

The High Court, consisting of a Chief Justice and five other Judges, is invested with both original and appellate jurisdiction. The former, which derives from the Constitution and certain Federal enactments, extends to include matters arising under treaty, affecting foreign representatives, between States or residents of different States; suits to which the Commonwealth is a party; and matters arising under the Constitution or involving its interpretation. Appellate jurisdiction extends to judgments and orders of the Supreme Courts of the various States and to certain other judgments and orders. The High Court is thus a Court of first instance and a national Court of Appeal. Its sittings are held in the various State capitals as occasion may arise.

At the head of each of the State systems is a Supreme Court with jurisdiction in questions of Common Law, Equity, Probate, Divorce and Admiralty. The Court also acts as a Court of Criminal Appeal. Control is exercised over inferior Courts by means of appeals and by virtue of such writs as those of *mandamus*, prohibition, *quo warranto*, and *certiorari*. The State system also embraces intermediate Courts such as district and county courts with jurisdiction limited by amount or locality; a number of minor Courts such as Courts of Petty Sessions and Children's Courts; and inferior Courts, invested with special jurisdiction and created as Courts of Marine Inquiry, Taxation Courts of Review, Mining Courts, and Industrial Courts.

The Commonwealth has established no inferior Courts for the exercise of any part of its original jurisdiction, but instead makes use of the State judiciaries. Accordingly, a number of minor civil and criminal matters

arising with reference to federal enactments come before the Courts of the State in which they arise, and are dealt with by virtue of an authority which has been deputed by the Commonwealth.

LAWSON, SIR HARRY SUTHERLAND WIGHTMAN (born 1875). Politician. He was born at Dunolly and educated at Melbourne. He sat continuously in the State Parliament from 1899 to 1928, holding, during that period, many offices including that of the Premiership from 1918 to 1924. He became Senator for the State of Victoria in 1928, and held ministerial rank in several Commonwealth Governments until 1934, when he resigned. He was awarded the K.C.M.G. in 1933.

LAWSON, HENRY ARCHIBALD (1867-1922). A poet who is said to have been "the first articulate voice of the real Australia." He was Australian born of a Norwegian parentage. Lawson worked spasmodically in Sydney as a youth, and assisted in the production of Socialist publications. For the *Sydney Bulletin* he undertook a tramp into the bush, and in 1893, when the New South Wales Government gave him a clerkship, he began to write both prose and verse of a high standard. His best prose is considered to be *While the Billy Boils* (1896).

LINLITHGOW, MARQUESS OF (1860-1908). Better known in Australian history as the Earl of Hopetoun. After having played a minor part in British politics, he was appointed Governor of Victoria in 1889. During the financial crisis of 1891-3 his salary was reduced from £10,000 to £7,000, but even so he continued to entertain on a lavish scale. He returned to England in 1895, but in 1900 he was made Governor-General of the Commonwealth. He again indulged in lavish expenditure at official functions, and he found his salary of £10,000 a year and the allowance of £10,000 for the Commonwealth inauguration ceremonies to be insufficient. His hint that his salary should be increased brought no result, and he resigned in 1902.

LITERATURE. It is natural that the first fruits of literature should be poetry, for although in a pioneer country there is little room for the professional writer, the poet can never be altogether repressed by his environment. The first published volume of poetry (1819) that can be traced is entitled *First Fruits of Australian Poetry*, by Barron Field, who emigrated to Australia in 1816 and became a judge of the Supreme Court of New South Wales. In 1823 William Charles Wentworth wrote a poem inspired by the life in his homeland entitled "Australia," which was of some little merit. Within the same period are the poets

Charles Thompson and John Dunmore Lang. Possibly these two may be regarded as the best of the early Australian poets, and who most gained their inspiration from Australia. Their works are to be found respectively in *Wild Notes from the Lyre of a Native Minstrel* and *Aurora Australis* both of which were published in 1826. Later Australian poets of the nineteenth century were Henry Parkes, Richard L. P. Rome ("Peter Possam"), Daniel H. Denieby, Henry Halloran, and J. Sheridan Moore.

The greatest poet was, however, Charles Harpur who published his first work entitled *Thoughts: A Series of Sonnets*, in 1845. He followed this with *The Creek of Four Graves* which achieved widespread popularity, and a play entitled *The Bush-rangers*. A contemporary poet of lesser distinction was Richard Henry Horne, who modelled his work on the classical poets of English literature. His best works are a poetic play, *The Death of Marlowe* and a blank verse narrative poem *Orion*.

James Lindsay Michael is known not only for his own poems but also because he gave encouragement to Henry Clarence Kendall, whose first work, published in 1862, was entitled *Poems and Songs*. His poems were later collected into two volumes entitled *Leaves from an Australian Forest* and *Songs from the Mountains*. The Australian poet best known to the world in general is Adam Lindsay Gordon, who lived a roving life in Australia and did not publish his first work until he was 34. It was entitled *Sea Spray and Smoke Drift* and it achieved immediate popularity.

Gordon's *Bush Ballads* had a swing which caught the imagination of the Australian people and established him as the national poet of that country. Some of his best poems are "How We Beat the Favourite," "The Sick Stockrider," and "Whisperings in Wattle Burghs."

Other Australian poets include James Brunton Stephens best known for his *Convict Once*, John Farrell, G. Gordon McCrae, Philip J. Holdsworth, Grace Carmichael, Mary Gilmour, W. H. Ogilvie, and C. J. Dennis.

The earliest of the well-known fiction writers of Australia is Henry Kingsley (1830-1870), though by no means the equal of his brother, Charles Kingsley, he wrote one book *Geoffrey Hamlyn*, the story of an immigrant into Australia which is still widely read in that country. The most famous of Australian writers is Marcus Clarke, who was born in London in 1846. His reputation depends on one book alone *For the Term of His Natural Life*, which deals with the question of the transportation

of convicts and their life in the penal settlements. More modern writers include T. Alexander Browne who wrote *Rolf Boldrewood*, *Robbery under Arms*, *The Squatter's Dream*, etc., and George Lewis Becke who wrote under the nom de plume of Louis Becke, the author of *By Reef and Palm* and other works. A popular Australian writer still living is A. G. Hales, whose works include *Wanderings of a Simple Child*, *The Viking Strain*, *Camp Fire Stories*, etc. Other Australian writers include Barbara Baynton, Mrs. Aeneas Gunn, C. A. Bean, A. J. Strong and T. C. Tucker.

Other prose writers include George William Rusden, who wrote a *History of Australia* and Gilbert Murray, the renowned Greek scholar who is most widely known for his translations of the plays of Sophocles.

LLOYD BRIGADIER GENERAL HERBERT WILLIAM (born 1883). He was educated at Wesley College, Melbourne, and became Captain and Adjutant of the Victorian Field Artillery during the World War, seeing active service at Gallipoli, France, and Belgium. He was promoted to the rank of Lieutenant-Colonel and awarded the D.S.O., C.M.G., C.B., and C.V.O. In 1920 he was appointed Director of Artillery at the Australian Army Headquarters, and for two years he was at the Staff College, Quetta, India. He has been member of the Legislative Assembly for Mosman, New South Wales, since 1932.

LORD HOWE ISLAND. See article, Vol. V.

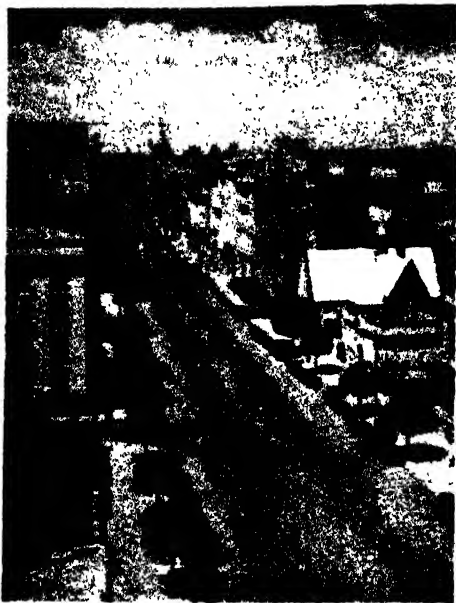
LOUISIADE ARCHIPELAGO. See article, Vol. V.

LYNCH, PATRICK JOSEPH (born 1867). President of the Commonwealth Senate. He was born at Newcastle, Co. Meath, and after his arrival in Australia, he followed a variety of occupations on land and sea. He became General Secretary of the Goldfields Enginemen's Association in 1897, and held this position until he became member of the Legislative Assembly for Mount Leonora in 1904. He was Minister of Public Works for a short period in 1905. He became Senator for Western Australia in 1906. After serving on a number of statutory bodies, including the River Murray Commission, of which he was the first chairman, he was, in 1932, elected President of the Senate.

LYONS, J. A. Statesman. See article, Vol. V.

LYRE BIRD. See article, Vol. V.

MACARTHUR, JOHN (1767-1834). One of the founders of the Australian wool producing industry. At the age of 21, Macarthur, was appointed to the New South Wales Corps, and became a Commandant to Parramatta. In 1793 and 1794 he was granted



ST. GEORGE'S TERRACE, PERTH
The capital of Western Australia was founded in 1829.

Photo: Australian National Travel Association

land which he cleared, to take up farming seriously. He imported merino sheep from Cape Colony, which he turned to his profit, and extended his estates considerably. After demonstrating in England that Australia could produce merino wool of the finest qualities, he was allowed to select 5000 acres in Australia for sheep breeding. He selected 5000 acres in New South Wales but his choice annoyed the authorities. He was banished until 1817. On his return, so successful was he in producing wool, that in 1822 the Society of Arts in London awarded him medals for having exported to England 150,000 lb. of fine wool, and also for producing wool as good as the finest Saxon merino.

MACARTHUR-ONSLOW, MAJ.-GENERAL JAMES WILLIAM (born 1867). Famous soldier. Educated at Sydney Grammar School and Trinity College, Cambridge. He joined the New South Wales Mounted Rifles in 1891, and later commanded that and other regiments. He took part in the South African War, and during the World War served in the A.I.F. Overseas Transport Service. In 1924 he retired with the rank of Major-General. From 1907 to 1922 he was member of the Legislative Assembly of New South Wales, and for the following twelve years he was member of the Legislative Council.

MacCULLUM, SIR MUNGO WILLIAM (born 1854). Studied at Glasgow, Berlin, and Leipzig, and was Professor of English Literature and History in the University of Wales before being appointed Challis Professor of Modern Literature at Sydney in 1887. He resigned in 1920, being nominated Professor Emeritus. From 1898 to 1914 he was an ex-officio member of the Senate, and in 1919 he was elected a member of that body. In 1924 he was made Vice-Chancellor of Sydney. He was awarded the K.C.M.G. in 1926.

McILWRAITH, SIR THOMAS (1835-1900). Statesman. Educated at Ayr and Glasgow, McIlwraith joined the Victorian railways as an engineer in 1854. In 1861 he journeyed to Queensland to become a squatter and there he entered politics. For the greater part of 1874 he was Minister of Works and Mines. In 1879 he formed a ministry. He annexed Papua, but his act was disowned by the British Government. He continued to play rather a turbulent part in politics, and became Prime Minister on two other occasions.

MACKENNEL, SIR BERTRAM (1863-1931). Famous sculptor. He was born at Melbourne and studied sculpture at the local school. Confident of his ability, he journeyed to London in 1882, and set up a studio with a fellow Australian, Charles Richardson. He studied at the Royal Academy and, after a short term in Paris, secured an appointment in the art department of a Shropshire pottery. In 1887 he designed and carved the panels on the front of the Victorian Houses of Parliament. In 1909 he became an associate of the Royal Academy, and in 1922 a full member. Among his many works are the memorials to Queen Victoria at Lahore and Ballarat, statues of Edward VI in London and Calcutta, and "The Horses of the Sun" over the doorway at Australia House, London.

Many specimens of his work are to be seen in Sydney, Melbourne, and Canberra. He was the first Australian to be admitted to the Royal Academy.

McLACHLAN, SENATOR ALEXANDER JOHN (born 1872). Statesman. Born at Naracoorte, South Australia, and educated at Hamilton Academy and Adelaide University, he was admitted to the Australian Bar in 1895. In 1925 he



ALEXANDER McLACHLAN
Photo: Photopress

was elected to the Senate for South Australia, and was a minister in the Bruce-Page ministry of 1926-29. He led the Australian delegation to Geneva in 1928, and signed the Kellogg Pact as plenipotentiary for Australia. He was Vice-President of the Executive Council in the Lyons administration, and Minister in Charge of Science and Industry and Development from 1932-34. He was appointed Postmaster-General in 1934.

MACQUARIE, LACHLAN (1761-1824). New South Wales's most energetic governor. A native of Mull, in Argyllshire, he served with considerable distinction in the army. He took over his appointment in New South Wales in 1809. He began to build new barracks for his troops, new hospitals, granaries and stores. He insisted in town-planning in Sydney, stipulating that streets should be 50 ft. wide, and laid out parks. He journeyed far and wide, planning new towns and communications, building 276 miles of new public roads. He believed in humane methods for the convicts, and that when their period of imprisonment was over they should be treated on exactly the same basis as free immigrants. This brought him into disfavour, and he was recalled in 1821. Although impetuous and engaging in frequent quarrels with civil and military authorities, Macquarie was undoubtedly a great and honest governor.

MARR, SIR CHARLES WILLIAM CLANNAN (born 1880). Statesman. Born at Petersham, New South Wales, he was educated at



SIR CHARLES MARR
Photo: Photopress

Newington College, Stanmore, and as an engineer in the Sydney Technical College. He served as an electrical engineer in various governmental departments, and supervised the erection for the Commonwealth Government of the first high-power wireless station in Australia, at Pennant Hills, New South Wales. During the World War he commanded the Australian and New Zealand wireless squadron in Mesopotamia, earning the D.S.O. and being mentioned in dispatches. Entering political life after the War, he became Chief Government Whip (1921-5) and Acting Minister for Defence (1926-27). Since then he has held several important ministerial posts. He inaugurated the Legislative Council for New Guinea, Rabaul, in 1933.

MARSUPIALS. See article, Vol. V.

MARTIN, SIR CHARLES JAMES (born 1866). Biologist. Martin was born in London and educated at King's College and Leipzig University. In 1891 he was appointed demonstrator in physiology in Sydney University, where for six years he engaged in research work, including investigations into the effects of snake poison. In 1897 he went to Melbourne University, and in 1901 was made professor in physiology. At the request of the British Government, he resigned in 1904 to become the Chairman of the War Office Committee then investigating anti-typhoid inoculation. He was also a member of the Joint Advisory Committee that investigated the cause and cure of plague in India, and in 1906 he was made Director of the Lister Institute of Preventive Medicine. During the World War he served with the Australian Army Medical Corps as a lieutenant-colonel in Gallipoli, Egypt, Palestine, and France. From 1931 to 1933 he was Chief of the Division of Animal Nutrition of the Australian Council for Scientific and Industrial Research, and Professor of Biochemistry and General Physiology at Adelaide University. He was knighted in 1927.

MASSON, SIR DAVID ORME (born 1858). Scientist. He was born in London, educated at Edinburgh and Göttingen. In 1886 he was appointed to the Chair of Chemistry at Melbourne, which he held until 1924, when he was made Professor Emeritus. From 1912 to 1916 he was President of the Professorial Board, and was a member of the governing council. In his early days at Melbourne, he gave considerable encouragement to the Australasian Association for the Advancement of Science, holding the presidency for the two years, 1911 to 1913. During the War he was Deputy Chairman of Commonwealth Advisory Council of the Institute of Science and Industry, and in 1922 he became President of Australian National Research Council, of which he was a founder member. He was, in 1924, the first President of the Australian Chemical Institute.

MASSEY-GREENE, SIR WALTER (born 1874). Company director and statesman. Born in England, he emigrated to Australia in 1891, and for seven years was in the service of the Bank of New South Wales. Afterwards he took up farming. In 1910 he was elected to the Commonwealth Parliament as a representative of Richmond, New South Wales, and became Chief Whip for the Liberal Party in the Cook Administration of 1913. He was also Whip for the Coalition Government in 1917. He held the post of Minister in Charge of Price Regulation and Food Control, 1918-19. He was

elected to the Senate in 1923, and again in 1925 and 1931.

MAWSON, SIR DOUGLAS. Scientist and explorer. See Vol. V.

MELBA, DAME NELLIE. See article, Vol. V.

MELBOURNE. See article, Vol. V.

MENZIES, HON. ROBERT GORDON (born 1894). Statesman. He was educated at



N. ROBERT MENZIES
Photo Photofress

Grenville College, Ballarat, and Wesley College Melbourne. On leaving the University he practised at the Victorian Bar. He entered the Victorian Parliament in 1928, and held office in various governments. In 1934 he became Attorney-General for the Commonwealth and Minister for Industry.

MILLER, SIR DENISON SAMUEL KING (1860-1923). Banker. Miller was born near Wollongong in New South Wales, and was educated at Denilquin. In 1876 he entered the service of the Bank of New South Wales, rising to the position of chief metropolitan inspector.

When the Commonwealth Bank was formed in 1912, Sir Denison was chosen to be its governor. The bank was formed without capital, its only resources being £10,000 borrowed from the Government. Its assets, however, rapidly increased. In 1914 they were only just under £10,000,000, and in 1922 they were £126,500,000. This gigantic expansion was due mainly to the enormous financial transactions carried through by the bank for the nation during the war years, and in all these transactions Miller proved himself to be a shrewd and sound judge of events.

MONASH, SIR JOHN (1865-1931). Australia's greatest soldier. He was born and educated at Melbourne, and practised there as a civil engineer. In 1913 he was made President of the Victorian Institute of Engineers.

Sir John had, however, made military tactics one of his chief studies, and after accepting a commission in the citizen forces in 1887, he was by 1913 a colonel. From 1907 to 1914 he was a member of the Intelligence Corps, and within a month of the outbreak of war was made brigadier-general in command of the Fourth Infantry Brigade. He took part in the Gallipoli landings and, during one of the critical phases, he personally led his troops in an assault. After

Gallipoli he was appointed to command the Third Australian Division, then in England, taking it to France. His great skill as a commander in engagements at Messines, the third battle of Ypres, and the German spring offensive of 1918, marked him out for further promotion, and when in May of that year, Sir William Birdwood was transferred to the Fifth (British) Army, Monash succeeded him as commander of the Australian Army Corps. His troops, benefited and heartened by his development of the combined use of tanks, artillery, and aeroplanes, quickly established an ascendancy over the Germans, and to him much of the success of the 8th August offensive has been credited. When his forces



SIR JOHN MONASH
Photo Fox

in October had pierced the Hindenburg line, they were at last withdrawn for a rest. Monash, although not a professional soldier, established himself as one of the most brilliant commanders of the war. In 1924 he was made President of the Australian Association for the Advancement of Science.

MOSS, MATTHEW LEWIS (born 1863). King's Counsel, West Australian Bar. Educated at Dunedin, New Zealand, and admitted as a barrister and solicitor in New Zealand in 1886. In 1892 he was admitted to the West Australian Bar. He became a member of the West Australian Legislative Assembly, representing North Fremantle in 1895, and sat on the Provincial Council from 1900 to 1914. He was Colonial Secretary in 1901 and Attorney-General in 1905. He is now Legal Adviser in London to the Government of Western Australia.

MOUND BIRD. See article, Vol. VI.

MOUNT BUFFALO. A plateau 13½ sq. miles in area in the Australian Alps in Victoria. The whole plateau is studded with peaks, the highest of which, the Horn, reaches 5645 ft. The plateau is now a National Park.

MOUNT KOSCIUSKO. A mountain in the Monaro tableland, a part of the Great Dividing Range of New South Wales. It is 7328 ft. in height, the highest point in Australia.

MURRAY, RIVER. See article, Vol. VI.

MUSIC. In music the British race colonizing Australia had no bequest from the aboriginal population. Those primitive survivors of the late Pliocene age of mankind's



IN THE AUSTRALIAN ALPS

The Mount Buffalo plateau, 13½ sq. miles in area, is now a National Park.

Photo: Australian National Travel Association

development had no music other than the wild chants of the "corroboree" dances; no musical instruments unless the "bull-roarer"—a kind of horn used to warn the women away from male initiation ceremonies could be so called. There is extant in a Sydney library a copy, dedicated to the then Queen Adelaide, of "the first specimen of Australian Music." It is called "The Song of the Women of the Menero Tribe," by Dr. Lhetsky, Colonist, New South Wales, and, in what purports to be native language, laments: "Unprotected race of people are we." It may be safely concluded that the enterprising composer drew on his imagination both for the language and music. Nevertheless, Australian aborigines are naturally musical; some of them have become remarkably good performers on various instruments of the white man; and the children take eagerly to choral singing.

The white Australians have a world-wide reputation in the musical world, but so far the continent has not produced a great composer, though it has many people who write minor music, vales, songs, studies, with much success. In musical execution, however, the Australians have made extraordinary progress for a young people. A great number of Australia's singers and instrumentalists have been popular in Europe and America. Headed by the incomparable Madame Melba and the well-known contralto Miss Ada Crossley (both now dead), Australians for many years have given of their art in the opera houses, the concert halls, the theatres of Great Britain, of America, and even of the Continent of Europe. It is nowadays rare in England to go to a high-class concert that has a varied programme without seeing at least one Australian name on the bill "The aviary of the world!" was the verdict of one impresario after visiting Australia; and he declared, with little if any exaggeration, that of any ten girls chosen at random in an Australian city, eight would have satisfactory voices and a sufficient sense of music to be available, with very little training, for an opera chorus.

Musical education is encouraged in the State schools, and there are numerous private teachers. The chief musical teaching centres

are the Conservatorium of Music, Melbourne (owing much to the late Madame Melba), and a similar institution at Sydney University, under the control of the New South Wales Education Department. Philharmonic, Liedertafel and other societies for the study of music exist in all the chief cities. Most of the more ambitious Australian students take finishing courses in one or other of the European capitals. There is no State or municipal opera house in Australia, though such a project has been often mooted.

NATURAL RESOURCES. The term "natural resource," usually a rather elastic one, is here meant to apply strictly to such features as minerals, forests, and fisheries, which are already known to be capable of transformation directly into commodities. In a wider sense the land itself is the most important of all natural resources, but a discussion here of its productive uses would involve a repetition of matters dealt with more fully in articles on agriculture and industries. Similarly, the use of rivers for irrigation will not be included in the present survey, but their direct use in the production of electric power will be considered. Artesian basins are mentioned because of their possible effect on the development of other resources.

Minerals. The extent of the total mineral wealth of Australia cannot yet be regarded as completely ascertained, as large areas of country still await systematic prospecting, but the presence of considerable deposits of valuable minerals has long been known. Coal, for instance, was discovered in 1797. The presence of silver was known as early as 1839, but it was twenty-five years later before the deposits were worked. Copper mining dates back to 1844; lead to about 1848; iron to about 1850; while the discovery of gold in payable quantities made the year 1851 a landmark in Australian history.

Among the more valuable non-metallic substances other than coal are coke, kerosene shale, graphite, alunite, asbestos, diatomaceous earth, phosphate, clays, ochres, etc.; in building stones—sandstones, syenites, granites, basalts, augite-andesite, porphyries, serpentines, slates, limestones, and marbles; in precious stones—diamonds,

Year	Gold	Coal Black	Copper	Pig Iron	Lead	Silver	Tin	Zinc
	fine oz.	ton	ton	ton	ton	oz.	ton	ton
1930	468,131	9,531,359	18,177	308,369	191,011	9,785,244	1544	142,058
1931	595,213	8,401,260	15,701	232,783	163,296	8,854,571	1707	96,306
1932	713,882	8,585,858	14,406	190,132	187,515	8,993,578	2059	84,742
1933	830,332	9,091,976	12,347	336,246	223,479	10,902,594	2499	114,684
1934	887,490	9,581,149	9092	487,259	217,883	11,253,631	2528	81,592
1935	914,737	10,887,954	12,529	598,493	229,211	11,982,385	3125	122,359

emeralds, rubies, sapphires, amethysts, precious opals, turquoises, topazes, garnets, chrysolites, cairngorms, agates, etc.

Although each state has some share of Australia's total mineral wealth, New South Wales has now the largest discovered deposits, both in respect of variety and value. In 1935 the value of mineral production in New South Wales was £9,225,848. West Australia was next (£6,086,791), then Queensland (£2,889,471), South Australia (£2,528,881), Victoria (£1,666,902), Tasmania (£1,071,507), and Northern Territory (£76,900).

The table on page 466, shows the quantities of principal minerals produced in the whole of Australia over a period of six years.

Gold. Alluvial diggings were the main features of gold production in the past, but nowadays reef-mining is the principal method of operation. Lodes of auriferous rock form the reefs, which are worked and treated by the cyanide process.

The amount of gold raised in Australia in any one year attained its maximum in 1903, when West Australia also reached its highest level. For the other states the years of greatest yields were: New South Wales, 1852; Victoria, 1856; Queensland, 1900; South Australia, 1894; and Tasmania, 1899.

The position of the states from 1898—the year in which West Australia took the lead in gold production—has been in the following order: West Australia, Victoria, Queensland, New South Wales, Tasmania, and South Australia, with the exception of the years 1921, 1926, 1930, 1931, and 1932, when the positions of Queensland and New South Wales were reversed. West Australia's predominant position has been even more marked in recent years owing to intensified activity which began during the years of economic depression. It is expected that the production figures for 1936 (not available at the time of writing) will constitute a record for the post-war period.

There are 975,920 sq. miles in West Australia, more than half of which is known to be gold-bearing. Of this only a small proportion has been more than superficially prospected.

Silver-lead-zinc ores. The name Broken Hill is synonymous with silver-lead-zinc because there, in the far west of New South Wales and close to the border of South Australia, is the world's greatest silver-lead-zinc bonanza. The outcrop of this remarkable lode, or what subsequently proved to be but the central portion of it, was discovered in 1883. Preliminary prospecting and development work was followed by the formation, in 1885, of the pioneer Broken Hill Proprietary Co. Ltd. Familiarly known as B.H.P., the history of this company consti-

tutes one of the romances of mining, primarily owing to the great extent of rich silver ore which was unearthed by the open-cutting and early underground excavations.

The lode, or ore-body, which is of composite form, and is disposed as a long flat arch, has been proved over a length of about three and a half miles. It varies in width up to 200 ft. or more. The B.H.P. mine was located on the central or outcropping crest of the arch. There is still more than 400,000 tons to be extracted.

Immediately to the south of the mine is the central mine of the Sulphide Corporation Ltd., which is still operating profitably with an ore-reserve of approximately 600,000 tons. Northward from B.H.P. along the line of lode the mines of North Broken Hill Ltd. contain 1,150,000 tons of remnant ore.

Areas which had little or no outcrop prospects are now the important mines of the field and among the greatest in the world. The North Broken Hill Company own all the northern portion of the field, and is extending workings in this direction to and below 2100 ft. level. At the other end of the field the Broken Hill South Company adjoins the Sulphide Corporation's mine, and is mining the large ore-body to and below a depth of 1480 ft. Farther southward lies the mine of the Zinc Corporation Ltd. with the ore-body, as shown by diamond drilling, still persisting strongly at the 2500 ft. horizon.

The possibility of other ore-bodies existing at greater depths in this persistent shear zone yet remains to be tested. The officially stated ore reserves of the field aggregate some 12,000,000 tons, with average grade 15.2 per cent lead, 11.6 per cent zinc, and 7 oz. of silver per ton.

Copper. Tasmania and Queensland have in recent years been the leading producers. South Australia has yielded more than any other state although the present production is small. The quantity of copper produced in Tasmania during 1933 was 10,739 tons, valued at £395,286, and production is on the increase, for in 1935 the value amounted to £464,087. The whole of the production in 1933 was by the Mount Lyell Mining and Railway Co. Ltd. This company treated 61,136 tons of ore and concentrates and produced 10,839 tons of blister copper containing: copper, 10,736 tons; silver, 127,562 oz.; and gold, 5524 oz., the whole valued at £440,000. Queensland's yield in the same year amounted to 2942 tons, valued at £105,031. In 1935, however, the yield was valued at £101,489 only. Deposits of copper ore are found over a large portion of South Australia. Increased attention is being given to the possibility of making fresh discoveries



SOME AGRICULTURAL RESOURCES

When the Australian sheep herds began early in the nineteenth century the rams would yield about $3\frac{1}{2}$ lb. of wool. A prize ram of first class stock now yields up to 40 lb. and the average for a flock is 8 lb. per animal. Dairy farming is an important industry; exports, chiefly of butter, to Great Britain in 1933-34 were valued at over £10,000,000. Fruits of all kinds are grown in most of the states and maize ranks fourth in importance among the cereals. 1. Shearing sheep at Timbour, Queensland. 2. Dairy cattle at Talgai West in the Darling Downs. 3. Sun drying fruit at Renmark, South Australia. 4. Hulling maize, Atherton, Queensland.

Photos: Agent-General for Queensland, Government of South Australia.

in the Moonta and Wallaroo copper fields, which played an important part in early development.

Tin. The activity of tin mining, like that of copper, is largely dependent on price fluctuations. New South Wales, Tasmania, and Queensland are the leading producers.

Iron. The wide distribution of iron ore throughout Australia has long been known, extensive deposits having been discovered at various places throughout the states, but the conversion of these deposits to the production of iron and steel is at present confined to New South Wales. The principal output is from Iron Knob, a hill west of Spencer Gulf, in South Australia. The hill has an average iron content exceeding 63 per cent. Production from deposits worked by the Broken Hill Proprietary Company at Iron Knob and at Middlebank reached its maximum in 1930, when the ore raised amounted to more than 928,000 tons, valued at £1,068,000.

Coal. South Australia is the only state which does not produce coal. By far the biggest yield comes from New South Wales,

and the coal basin which, with Sydney in the centre, stretches along the coastal region from Newcastle in the north to Wollongong in the south, is the most important in the Southern Hemisphere and one of the richest in the world. The coal from the various districts in this basin differs considerably in quality. That from the northern district is specially suitable for gas-making and household purposes, while the product of the southern (Illawarra) and western (Lithgow) areas is an excellent steam coal. The Greta coal seams in the northern division are being extensively worked between West Maitland and Cessnock, and this stretch of country, covering a distance of 15 miles, is now the most important coal-mining district in Australasia. Of the total quantity of coal won in New South Wales since the inception of operations to the end of 1933—378,000,000 tons—68 per cent was obtained in the northern district, 21 per cent in the southern district, and 11 per cent in the western district.

In Victoria deposits of black coal occur in the Jurassic system. All the workable seams,



VANILLA VINES AT CAIRNS
Photo Agent General for Queensland

of a thickness ranging from 2 ft 3 in. to 6 ft., are in the Southern Gippsland district. Brown coal deposits, situated chiefly in the Latrobe valley in the eastern half of Gippsland, are very thick and constitute an enormous reserve. Its abundance and accessibility enable it to be economically used, especially for electricity purposes, despite its poor heating power.

Queensland ranks second to New South Wales in the production of coal. The principal output is from the district, round Ipswich and on the adjacent Darling Downs. Next in importance are the deposits at Bowen, considerably further north. The total output is between 800,000 and 900,000 tons a year.

In Western Australia coal is known in several areas and worked in the Collie district in the south-west. Production from the collieries in this district amounted in 1935 to 318,012 tons.

There are coalfields in Tasmania, but the output is small.

Forests. The bulk of the present local timber supply comes from the thickly forested areas in the 30 in. and over rainfall belt south of the tropics, and the 70 in. and over rainfall belt within the tropics. The total forest area included in these divisions is comparatively small, and is confined to the following regions: the coastal belt in the extreme south-west of Western Australia from a little north of Perth to Albany; the Otway country in the south of Victoria and the whole of the south-eastern portion of that state; the mountain forests of Victoria and New South Wales; the coastal districts of New South Wales and Queensland;

the greater portion of Tasmania; the forests on the Murray River near Echunga; and the cypress pine belt from the Murray northward to Queensland and westward to the coastal belt.

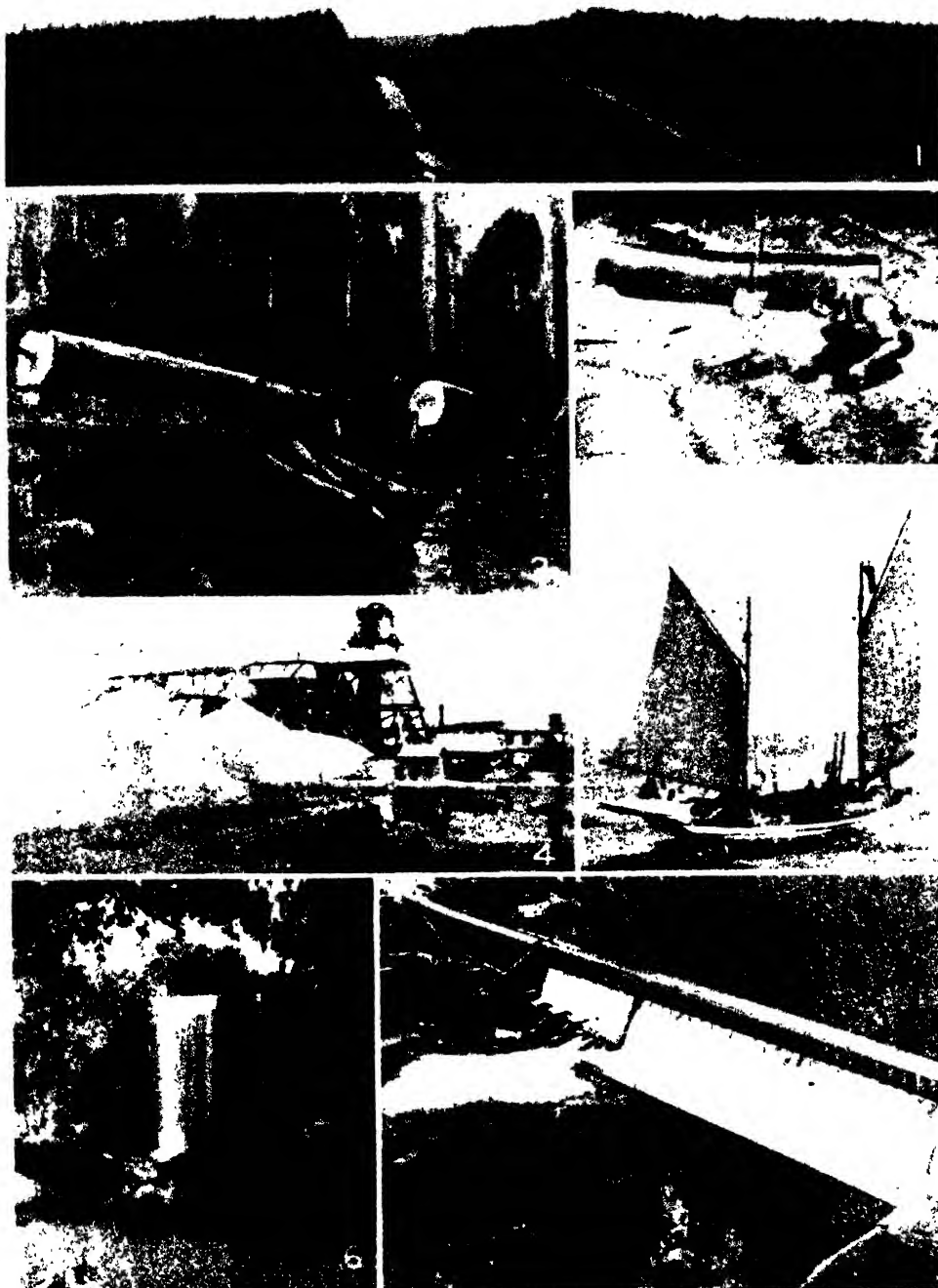
More than 90 per cent of the timber trees of Australia consists of hardwoods belonging to the Eucalyptus family. About 400 species are recognized, but the chief commercial varieties are confined to about fifty species. The eucalypts are remarkable for their strength and durability. They include ironbark, jarrah, karri, and tuart. In addition to the hardwood forests and the cypress pine belt, the coastal strip in Queensland and northern New South Wales provide "rain" or "brush" forests. These tropical forests furnish the serviceable hoop pine and furniture timbers such as black bean, Queensland walnut and

maple, silkwood, etc. The savannah forests of the interior yield minor products such as sandalwood and tan barks, but do not produce timber.

Estimates of the total forest area of Australia are conflicting, but it is considered that 19,500,000 acres represent the possible limit for permanent reservation—Queensland 6,000,000, Victoria 5,500,000, New



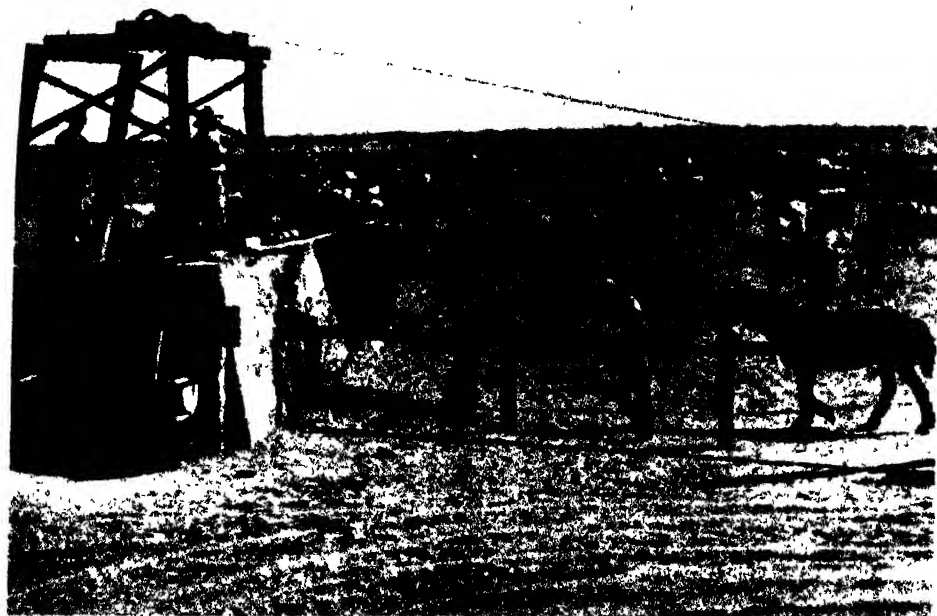
TREE FELLING
Photo Australian National Travel Association



SOME NATURAL RESOURCES

As generally understood, minerals, forests, fisheries and water-power are the natural resources. 1. Mount Burr Pine Forest. Trees on the left were planted in 1914; those on the right in 1913. More than 90 per cent of Australian timber trees are hardwoods of the Eucalyptus family. 2. Transporting timber in Tasmania. 3. Old style panning for gold. Now reef mining is the principal method. 4. Talbot alluvial gold mine in the Maryborough district of Victoria. In 1935 over 900,000 fine ounces of gold were mined in Australia. 5. Pearling lugger. The pearl fisheries extend for more than 2000 miles along the coast from Cape York to Shark Bay. 6. Fisherfalls, Innisfail, Queensland. The nature of the rivers militates against their use for hydro-electric power, but it is estimated that about 1,000,000 h.p. might be made available. 7. The Hume dam. It is a water conservation, not a power generation, scheme.

Photos: Government of Queensland; Government of South Australia; Australian National Travel Association, Fox



WATERING CATTLE AT HONEY WELL ON A CENTRAL AUSTRALIAN STOCK ROUTE

Large herds are often driven from Northern Territory or Western Queensland to the railhead at Alice Springs. The distances driven may be hundreds of miles, and without wells on the route to safeguard the water supply, the trip would be impossible for cattle.

Photo: Australian National Travel Bureau

South Wales 4,000,000, Western Australia 3,000,000, South Australia and Tasmania each 500,000.

Fisheries. Australia possesses abundant and varied fish, including both tropical and temperate varieties, and destructive as well as valuable species. In rivers and lakes both indigenous and imported varieties thrive. There are good trawling grounds off the coast of New South Wales from Port Stephens to the neighbourhood of Cape Howe, east of Flinders Island in the Bass Strait, and in the middle of the Great Bight, half-way between Adelaide and Albany. Despite these resources, the industry is still largely undeveloped.

Natural oyster beds exist on the foreshores in the shallow waters of inlets and estuaries in several parts of Australia. By husbanding the natural crop and by judicious transplanting, the output has been materially augmented. In New South Wales and Queensland the oyster industry has thriven. Smaller yields are obtained in South Australia, Victoria, and Tasmania.

Pearl-shelling is carried on in the tropical waters of Queensland, the Northern Territory, and West Australia. The pearl oyster

inhabits the northern and western coastal waters from Cape York to Shark Bay, a length of shore of over 2000 miles. The shells are marketed in considerable quantities, and pearls are obtained in Queensland, Western Australia, and the Northern Territory. In Queensland and the Northern Territory the *bêche-de-mer* industry is carried on, and tortoise-shell is obtained on the coasts.

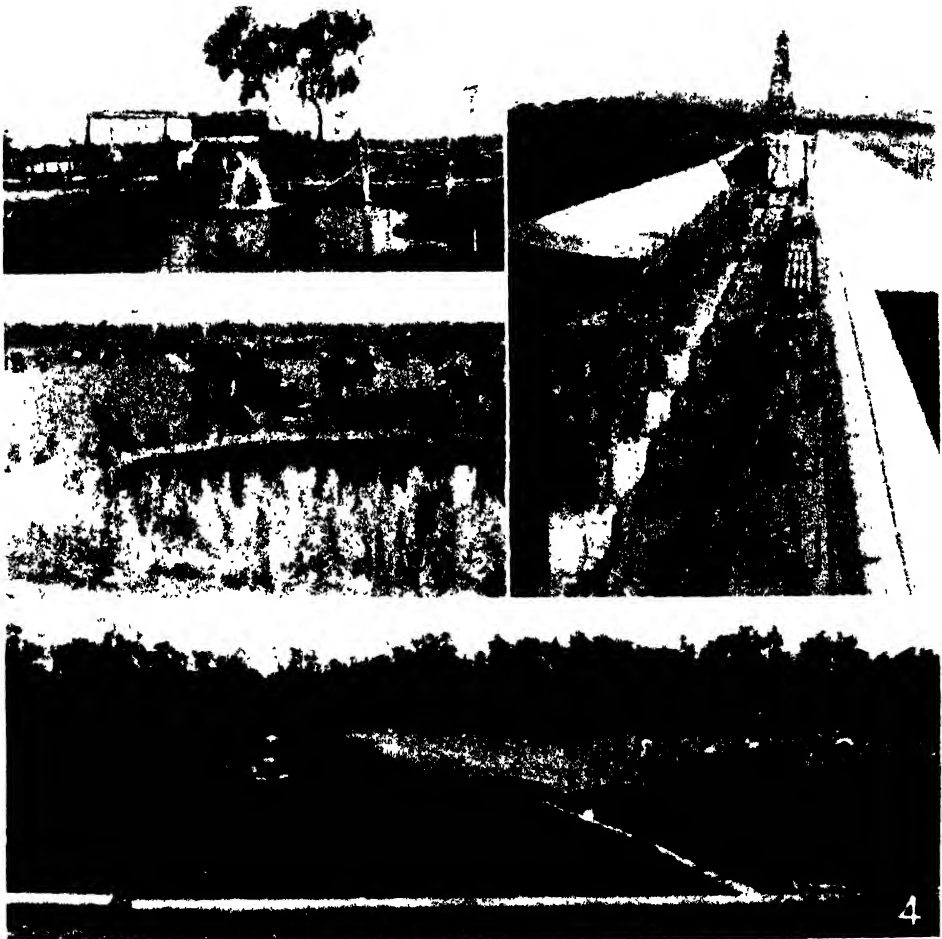
Artesian Water. In every country subject to droughts the provision of adequate systems of water conservation is a matter of prime importance. The area known as the "Great Australian Artesian Basin" includes: considerably more than one-half of Queensland, taking in practically all that state lying west of the Great Dividing Range, with the exception of an area in the north-west contiguous to the Northern Territory; a considerable strip of New South Wales along its northern boundary and west of the Great Dividing Range; the north-eastern portion of South Australia proper, together with the extreme north-eastern corner of the Northern Territory. This basin is said to be the largest yet discovered and measures about 600,000 sq. miles, of which 376,000 sq. miles are in Queensland, 118,000

sq. miles in South Australia, 80,000 sq. miles in New South Wales, and 25,000 sq. miles in the Northern Territory. The area of the intake beds is estimated at 60,010 sq. miles - 50,000 in Queensland and 10,010 in New South Wales.

The Western Australian Basins fall naturally within five distinct groups: the Eucla Basin, in the extreme south-west of the state, extending well into South Australia along the shores of the Great Australian Bight; the Coastal Plain, west of the Darling Range; the North-west Basin, between

the Murchison and Ashburton Rivers; the Gulf Basin, between Cambridge Gulf and Queen's Channel; and the Desert Basin, between De Grey and Fitzroy Rivers. In the Coastal Plain Basin to the west of the Darling Ranges, artesian boring has been carried on successfully for many years.

The Murray River Basin extends over south-western New South Wales, north-western Victoria, and south-eastern South Australia. It is bounded on the west by the azoic and palaeozoic rocks of the Mount



WATER SUPPLY

The average Australian rainfall is equal to that of England, but it comes in wholesale lots. Conditions make good promise for irrigation if the moisture can be conserved. 1. An artesian well at Barcaldine, Queensland. Artesian boring has been carried on successfully for many years and there are now over 64,000 bores. 2. Cattle being watered from an artesian supply at Todmorden Station near Oodnadatta, South Australia. 3. The Hume dam on the Murray River while under construction. Completed in 1936 after seventeen years work it will store 34,000,000,000 gallons and irrigate millions of acres. 4. Irrigating tobacco in Queensland.

Photos: Agent-General for Queensland, South Australian Government, Australian National Travel Association

Lofty and other ranges extending northwards from near the mouth of the Murray to the Barrier Range, and on the east and north-east by the ranges of Victoria and New South Wales. This tertiary water-basin is occupied by a succession of sedimentary formations, both porous and impervious. It is of interest to note that the waters of the Murray River are partly supplied by influx from the water-bearing beds of this basin. On the Victorian side, bores have been put down and water has been struck at various levels.

The number of artesian and sub-artesian bores in the various states is: New South Wales, 575; Victoria, 380; Queensland, 4808; South Australia, 207; Western Australia, 255; Northern Territory, 191; total 6416.

Water Power. The nature of the rivers militates against their use for hydro-electric purposes, and there is only a slight development in this direction. It is estimated, however, that about 1,000,000 h.p. might be made available. Tasmania offers the greatest possibilities in this direction and a big scheme has been developed there.

(Acknowledgment: Information about silver-lead-zinc from an article by Sir Colin Fraser, President of the Australian Mines and Metals Association.)

NAURA. See Vol. VI.

NEWCASTLE. See NEW SOUTH WALES, Vol. VI.

NEW SOUTH WALES. See Vol. VI.

NORFOLK ISLAND. See Vol. VI.

NORTH AUSTRALIA. See Vol. VI.

NORTHERN TERRITORY. See Vol. VI.

OGILVIE, ALBERT GEORGE (born 1891). Statesman. Born at Hobart, Tasmania, and educated at St. Patrick's College, Ballarat, and the University of Tasmania. He was called to the Bar in 1914, and entered Parliament as Labour member for Franklin in 1919. He became Attorney-General and Minister of Education in 1923, and held other ministerial offices until 1927. In 1929 he became Leader of the Labour Party, and in 1934 Premier of Tasmania without portfolio.

O'MALLEY, KING. Statesman. From 1901 to 1906 he was M.P. for Tasmania in the first Federal House of Representatives, and for Darwin from 1906 to 1917. He was one of the founders of the Commonwealth Bank of Australia. As Minister for Home Affairs (1910-13 and 1915-16) he was responsible for the construction of the Trans-Continental Railway, commenced in 1910, and was in charge of the arrangements for the Commonwealth capital at Canberra in March, 1913.

PAGE, DR. EARLE CHRISTMAS GRAFTON (born 1880). Statesman. Educated at the

Sydney High School and the University. During the World War he served in France and in Egypt. On entering public life, he soon became prominent, and in 1918 he was appointed Mayor of South Grafton, New South Wales. The following year he was elected to represent the Cowper Division in the Australian Parliament, and this representation has been unbroken. He became Leader of the Australian Country Party in 1920, and as such has wielded considerable influence in the political life of the country. He was Acting Prime Minister at various periods in 1923, 1924, 1926, and 1927, being the close political associate of S. M. Bruce. In 1934 he became Deputy Prime Minister for the Commonwealth and Minister of Commerce.

PARKES, SIR HENRY (1815-1896). One of the greatest Australian statesmen of the last century. He was born at Stoneleigh, in Warwickshire, and in his youth was associated actively with the Birmingham Political Union campaign for the Reform Bill. He and his wife emigrated to Australia in 1839, and he began business as an ivory-turner and toy dealer. He founded, in 1850, the *Empire* newspaper, and in 1854 he was elected by Sydney to the Legislative Council. His paper failed in 1857, whereupon for a short time he resigned from politics. He soon returned, however, and in 1866 became Colonial Secretary. He incidentally brought about important reforms of the educational system, improved the hospital services, established a volunteer military organization for defence, and passed an important Municipalities Act. Personal financial difficulties caused another temporary retirement, but in 1872 he formed his first ministry. Neither this nor his second (1877) achieved much, but in his third (1878) he again tackled with considerable vigour the task of improving the educational facilities. In 1887, at the age of 71, he formed his fourth Ministry, and in 1889 formed a fifth.

In 1891 he was President of the Convention that drafted a Constitution Bill, but he failed to win the approval of New South Wales to the proposals. He strove unsuccessfully to bring about federal government in his time.



DR. EARLE PAGE
Photo: Photopress

PARKHILL, SIR ROBERT ARCHDALE (born 1879). Statesman. He entered politics via



R. A. PARKHILL.
Photo: Central

the Liberal Association of which he was general secretary. He was elected to represent Warringah in 1927, and became Minister for Home Affairs and Transport in 1932. In the following two years he was Minister for the Interior and Postmaster-General in turn, representing Australia at the International Postal Union at Cairo in

1934. He became Minister for Defence shortly afterwards. Created K C M.G. in 1937.

PATERSON, ANDREW BARTON (born 1864). Well-known writer and poet. Born at Molong, New South Wales, he was trained for a legal profession. He contributed lively verse to the *Bulletin*, and in 1895 published his first volume, *The Man from Snowy River*, of which more than 100,000 copies have been sold. He was war correspondent for the *Sydney Morning Herald* in the South African War, and was for a period editor of the *Sydney Evening News*. He has a long list of publications, the chief of which are *Rio Grande's Last Race*, *An Outback Marriage* (a novel), *Old Bush Songs*, and *The Shearer's Colt* (1936).

PEARCE, SIR GEORGE FOSTER (born 1870). Statesman. He was born at Mount Barker, South Australia, and began life as a carpenter and joiner.



SIR GEORGE PEARCE
Photo: Photopress

He went to Western Australia in 1892, where he at once became associated with trade union politics. He took part in the gold rush to Coolgardie in 1894, tramping 400 miles from Perth. In 1899 he became President of the Trade Union Congress, and in 1901 he was elected a representative of Western Australia in

the federal Senate. He has been Minister for Defence on four occasions, 1908-9, 1910-13, 1914-21 (during which he introduced compulsory military service into Australia), and

1931-34, and Minister for Home and Territories from 1921 to 1926. He was a member of the 1911 Imperial Conference, and was Australia's representative at St. Germain's to sign the peace treaty with Austria. He also represented Australia at the 1922 Conference on armaments at Washington.

PERTH. See WESTERN AUSTRALIA, Vol. VIII.

PHILLIP, ARTHUR (1738-1814). After a distinguished naval career, he was given the task of leading an expedition to Botany Bay, and sailed in 1786. On his arrival in the following year, after having called at the Bay, he unfurled the British flag in Sydney Cove and proclaimed it a British colony. He sent King with a small party of soldiers and convicts to found a settlement at Norfolk Island. The community at the Cove, unable to find agricultural land of any value, were in frequent danger of suffering from famine.

Eventually Phillip established farms at Parramatta and elsewhere, making the community self-supporting; he proved himself to be an able administrator, and when, owing to bad health, he resigned his governorship in 1792, he was awarded a pension of £500 in recognition of his services.

PHYSICAL FEATURES. Australia is a land of contrasts which delight and often amaze the traveller who is accustomed to gentler transitions in scenery. He will find between the eleventh and forty-fourth parallels every form of climate, the tropical sun of an African desert, the snow of an alpine winter, and the mild breeze of a bright afternoon in Surrey. His eye will meet with every type of landscape from endless plain to alpine height, and he will gaze at stretches of vegetation that seem to be taken out of a fairy-tale book.

Australia is the land of sun. More than one-half of its area—roughly 1,500,000 sq. miles—belongs to the tropical zone, the rest possesses a temperate climate which, however, particularly in the south-west, is influenced by warm winds during eight months of the year. The aggregate hours of sunshine yearly in each of the six State capitals are as follows: Perth, 2812 hours; Brisbane, 2682; Adelaide, 2547; Sydney, 2466; Melbourne, 2249; Hobart, 2138.

It has been rightly said that this temperate part of Australia is a climatic mixture of California and Southern Europe, so that during the short winter the tourist can have his winter sport in the snow-clad mountains of New South Wales, or he can go north to bask in the glorious sunshine on the Queensland coast.

A Journey from West to East. The peculiar physical features of the Australian continent reveal themselves in their enchanting

variety to the traveller who boards a Trans-Australian railway train in Kalgoorlie bound for Port Augusta. Kalgoorlie is situated in the central division of Western Australia, that is, it lies in that enormous low plateau of Western Australia which consists of an ancient block of the earth's crust. This block has remained undisturbed by geological changes for ages.

During the first section of the journey the train runs through timbered country all the way for about 160 miles. The prevailing tree is the eucalyptus or gum, of which there are more than 400 kinds in Australia. In this south-western district they reach a fair size, and include the enormous karri and jarrah species, which often grow to a height of several hundred feet. Here and there are patches of kurrajong and the sweet smelling sandalwood. The ground in the more open country is covered mile after mile with daisies. In spring the reddish-brown carpet of hop flowers affords a delightful contrast with the rich green of the trees and shrubs.

When the train has left the granitic plateau and reaches the limestone area of South Australia, the scenery changes suddenly and abruptly. The edge of the eucalyptus is reached and the train runs for 450 miles through a plain which is, apart from a narrow belt of black oak and myall, completely treeless, and has a patchy cover of bush about 3 ft. or 4 ft. high. This plain is not a dead level, but extends in gentle undulations. The limestone is covered with a foot or two of red soil, but everywhere fragments of scattered limestone project upwards through the soil or lie loose upon the surface. Wherever there is a deeper depression more soil collects and a luxuriant growth of grass interrupts and, as it were, underlines the desolateness of the landscape. Some of these depressions are covered with grass a foot long, waving in the wind and spangled with pink and white daisies. But the characteristic plants of the plain are the bluebush, with its unreal and uncanny colouring, and the saltbush, with its greyish green leaves. These bushes thrive when the grass withers in the summer heat. Here and there, a tiny dwarf acacia raises its thin leaves and yellow fluffy balls a few inches from the ground, but it does not seem to belong to this uncongenial environment.

By day the sun blazes in a cloudless sky, and the white of the limestone and the flowers reflects its rays so that they hurt the eyes.

When the train, which, incidentally, runs through the plain for about 300 miles without a single curve, has reached the edge of the treeless country the landscape shades off into the sandhills, and the last division between the sandhills and Port Augusta is more complex in its features and more varied

than any of the others. For over 100 miles the line runs across red soil plains which, for the most part, are well timbered with black oak and myall and some eucalypts. The granite comes up again to the surface and rocks appear in low but rugged hills. After the hills have died away, the lake country is entered. The lakes are really enormous shallow salt-water pools. After another 50 miles of plain country Port Augusta is reached.

A physical feature peculiar to Australia is the Great Barrier Reef, which fringes the coast of Queensland for about 1200 miles. The pools of the reef teem with brilliantly coloured fish and coral. Palm and mangrove and innumerable forms of other vegetation sprout and grow luxuriantly in the warm sunshine. Turtles invade the islands to lay their eggs and there are millions of sea birds.

Queensland, which occupies the north-east corner of Australia, may be divided into three natural regions (1) the hot coastal margins, (2) the eastern highlands, (3) the western plain which becomes gradually more arid as the interior is approached. Queensland, apart from its Great Barrier Reef, offers to the visitor a rich variety of tropical and sub-tropical scenery, impressive palm forests, jungle clad mountain ranges, and huge waterfalls. The alluvial plains of the coastal regions produce such tropical crops as bananas and pineapples, whilst the chief crop, maize, is found at greater heights.

The geographical regions of New South Wales are very similar to those of Queensland. It also has a coastal belt, the eastern highlands and the western plains. It has delightful coastal scenery with hills sloping down into the Pacific Ocean. There are millions of acres of farm and pasture land, and the sheltered valleys reveal to the tourist exquisite tints when he travels in a train 3000 ft. above sea-level. It is a memorable experience to stand on a high mountain crag and look over a vast sea of forest, below and beyond. New South Wales possesses magnificent forest reserves, and one of its chief attractions is the strikingly precipitous Blue Mountains. Sydney Harbour is one of the most beautiful harbours in the world.

Victoria, the smallest State in the Commonwealth, in the south of Australia, may be divided into four regions: (1) north-western grass land, (2) an eastern highland region, (3) a Mediterranean region, and (4) a small eastern warm temperate belt. It also offers a scenery of infinite variety—mountain ranges, such as Mount Buffalo and the Grampians, a pleasant coast line, and a wealth of river and forest, waterfall and glen. The small, but famous, River Yarra, its banks shaded with wattle trees, repays a visit.



AUSTRALIAN COASTAL SCENERY

1. Racing yachts in Sydney harbour. 2. The beach of Heron Island, Queensland: much of the coastline of this state is fringed by the Great Barrier Reef. 3. Whitsunday Passage, eastern entrance to Kennedy Sound, on the Great Barrier Reef. 4. Rocky coast at Cowes, Phillip Island, Victoria. 5. View from Bald Hill on the south coast of New South Wales. 6. Pittwater, New South Wales.

Photos: Australian Trade Publisty; Agent-General for Queensland; Australian National Travel Association; Government of New South Wales



AUSTRALIAN SCENERY IN THE INTERIOR

The temperate part of Australia is a climatic mixture of California and Southern Europe. 1. A farm at Molecallk in Northern Tasmania which has been called the "Switzerland of the South." In this area lie the principal caves of Tasmania. 2. A waterfall 500 ft. in height, typical of many in Victoria. 3. A road in the orchard country of New South Wales. 4. In Queen's Gardens, Perth, Western Australia. 5. Near Marble Hill, twelve miles from Adelaide in South Australia.

Photos: Government of South Australia; Agent-General for Western Australia; Emmett; Cherry Kearlon, Government of New South Wales

West Australia possesses a small area of hot, tropical monsoon lands, a savannah region, a huge tract of desert and semi-desert, and a Mediterranean region. Beautiful streams flowing through giant forests; the Porongorups and Stirling Range Mountains; limestone caves at Yanchep Park, Yallingup, and in the Margaret River country; Rottnest Island—all these are to be found among Western Australia's most popular tourist resorts.

South Australia and the Northern Territory may be divided into (1) a tropical monsoon coastal belt, (2) a belt of savannahs, (3) a large area of desert and semi-desert, (4) a Mediterranean coastal belt in the south. The vast undeveloped area of the north includes the first three regions. In South Australia the tourist will be attracted by the Mount Lofty Ranges which form a beautiful background to the city of Adelaide, by the limestone caves at Naracoorte, and the crater lakes at Mount Gambier. Into this district flows the River Murray, which is Australia's greatest river.

The island of Tasmania is an outlying portion of the Australian Eastern highlands. It has been called the "Switzerland of the South," and it contains several beautiful rivers such as the Gordon, the King, the Tamar, and the Derwent.

PLANT LIFE. The flora of Australia is unlike that of any other continent, and is very ancient, some of the plants growing there to-day are similar to those which flourished in geological periods. The flora of the Northern Territory and Queensland is of a tropical character, especially in coastal districts. There are dense forests (known locally as scrub) with palm, tree ferns, and beautifully flowering timber trees overgrown with orchids and ferns and festooned with climbing plants, particularly lawyer vines (*Calamus*). There are screw pines (*Pandanus*), mangrove swamps with nipa palms and huge ficus with aerial roots, and tall hoop pines and bunya-bunya (*Araucarias*). Some of the tropical vegetation extends along the eastern coast of New South Wales, including two kinds of palms (*Seaforthia* and *Livistonia*), and tree ferns (*Dichsonia antarctica* and *Alsophila australis*). The latter occur right down the coastal area through Victoria (but not to South Australia) to Tasmania. In these states the climate being temperate the character of the vegetation changes. Though the gullies are full of tree ferns and there are tall gum trees, the uncleared land or bush is much less dense than the Queensland scrub. Most of the finest timber has been ruthlessly cleared.

West of the Dividing Range all down the east of the continent, some 100 miles from the coast, stretch rolling downs of grass and

small trees. Farther into the dry interior there is a practically worthless tableland which is by no means devoid of flowers. Western Australia has a distinct flora of over 4000 species of its own.

Although Australia is a large area with great variety of climate, certain families of plants are met with under every condition. Chief among these are the *Eucalyptus* or gums. They are practically confined to Australia—none grows wild in any other



MACROZAMIA PALM

The macrozamia is believed to be relics of prehistoric flora, and the world's oldest living things.

Photo: Australian National Travel Ass.

continent. There are about 400 species, and they vary in size from quite small slender shrubs 10 ft. to 20 ft. high to giants in stature, which are among the most lofty trees in the world. *Eucalyptus regnans*, the mountain ash of Victoria, has been measured to 318 ft. Each state has species peculiar to it, but no part of Australia is without gum trees. In Western Australia the finest timber are the karri and jarrah; the latter furnishes wood for London paving. They all have local names, the cider gum of Tasmania (*E. Gunnii*), the blue gum of Victoria (*E. globulus*), the bloodwood of New South Wales (*E. corymbosa*), etc. There are ironbarks, peppermints, stringybark, box, or the



AUSTRALIAN TREES

1. Bottle tree in North Australia. 2. Felling a Karri tree in Western Australia. 3. Baobab tree in the Kimberleys. 4. A jungle giant.

Photos: Agent-General for Western Australia; Australian National Travel Association

smaller mallee and many other groups, but all are Eucalyptus. They are evergreen, like almost every tree in Australia, and their leaves, which secrete aromatic oil, are soft in a young state, but become hard, often sickle shaped when mature, and they present the edge of the leaf to the sunlight. The resin-like gum which exudes from some species earned them their popular name. They shed their bark, and the various colours of the trunks from dark brown or red to grey or white is very characteristic of Australian scenery.

Another genus as widely distributed as the Eucalyptus is the Acacia (which see). It has world wide distribution, but 400 species are exclusively Australian. The popular name for most of these is wattle, but mulgas, myall, cooba, blackwood, deadfinish, hickory, kangaroo thorn, etc., are all equally Acacias. They are one of the chief glories of the flora. Their flowers are yellow, any shade from pale cream or lemon to deep gold and soft fluffy round balls or cylindrical spikes. They are 10 ft. to 30 ft. as a rule, few are quite dwarf, others tall such as the blackwood (*A*

melanoxylon) which attains 100 ft. Their greyish green foliage is either feathery (bipinnated) or they dispense with true leaves partially or altogether, and what serves as a leaf is really a flattened leaf-stalk called *phyllode*. Great numbers of the pea flower genera, belonging to the same great family (*Leguminosae*) as the *Acacias*, are peculiar to Australia. *Chorizem*, *Dillwynia*, *Jacksonia*, *Hovea*, *Hardenbergia*, *Daviesia*, *Swaenonia*, etc.

The Myrtle family, which includes Eucalypts, is also widely represented by other genera throughout every state. The bottle-brush trees (*Callistemon* and *Melaleuca*) with red or creamy flowers frequently mark the margins of rivers. Tea-trees (*Leptospermum*) of many species allied to those in New Zealand, are common, as also *Eugenias*, the most popular, being called lilly-pilly.

Twenty-nine genera distributed throughout the continent belong to the *Protea* family, all different from those of South Africa. The two most important are *grevillias*, which are everywhere, some quite low flowering shrubs, others tall, particularly the silky oak



AUSTRALIAN PLANTS

Australian flora is unlike that of any other continent. Some of the plants growing to-day are similar to those of the early geological periods. 1. Wattle blossom. 2. Pandanus palms on Heron Island, Queensland. 3. Hoop pine tree covered with the roots and feelers of a parasitic fig. Less than one-quarter of the height of the tree is shown. 4. Dense forest, known locally as "scrub." 5. Water vines in the jungle on the Macpherson Range, Queensland. The vine, which grows to an immense size, often over one foot thick, produces pure water when cut. 6. Paw paws. 7. Date palms in the Northern Territory. 8. Blue water lilies in a swamp on the Clarence River, New South Wales. A comb-crested Parra bird and its nest can be seen.

Photos: Agent-General for South Australia; Australian National Travel Association

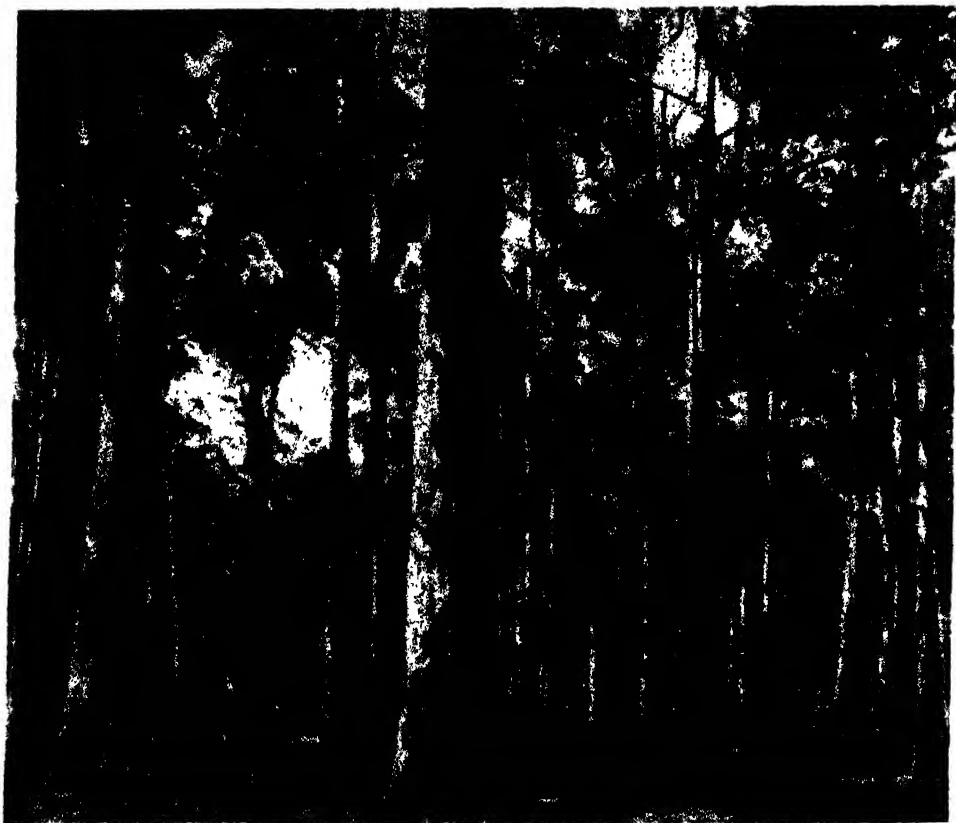
of New South Wales, which reaches 120 ft. with gorgeous golden flowers, and banksias, called honeysuckles, and one beefwood, with strange large cone-shaped flowers and seed-vessels. Hakeas or needle-bushes and the waratahs (*Telopea*), three species, are also proteas. The heath family is well represented by various *Epacris*, although there is no true heather. The so-called native fuchsia of New South Wales is one of the finest, with pendulous scarlet and white flowers. The principal conifers, the cypress pines (*Callitris*), are allied to those of South Africa. The she-oak (*Casuarina*) a survivor of a family plentiful in geological periods, although not wholly, is chiefly Australian and abundant there. It has no true leaves and the wiry branches are jointed like the fine stalks of the horse-tail.

The wonderful flora of Western Australia embraces nearly all the genera confined to Australia but with different species, and some genera found nowhere else in the world. The most peculiar are the kangaroo paws (*Anigozanthos*). These grow like rushes and have

claw-like flowers covered with woolly hairs. The most strange are those with green on the flowers and red on the stems; one kind has jet-black hairs. There are no tree ferns in Western Australia, but many zamia palms and the grass trees (*Xanthorrhoea*), which grow in other states are represented by a species commonly known as blackboys, which are most conspicuous. They are 5 ft. to 15 ft. high with a mop of ribbon-like grass at the top, out of which grows a tall flower spike.

In the spring the uncleared bush is covered with a marvellous collection of flowers of every conceivable form and colour, including many beautiful species of *Templetonia*, *Verticordia*, *Pimelea*, *Kennedya*, fringed lilies (*Thysanotus*), swan-river daisy (*Brachycome*), and many ground orchids. Besides such things as the outstanding Christmas tree (*Nuytsia*) and eschenaultia and the popular Geraldton wax-flower (*Chamaelaucium*).

In the waterless interior there are many drought-loving species. Bulbous plants and succulents are few (only one mesembryanthemum, known as pig face); it is chiefly by



GIANT TREES IN AN AUSTRALIAN FOREST



AUSTRALIAN FLOWERS

1. Box Poison. 2. Kangaroo Paws. 3. Scented Boronia. 4. Albany Bottle-brush. 5. Bud of the Banksia. 6. Prickly Hovea. 7. Banksia or "Firewood." 8. Black Wattle. 9. Geraldton Wax plant. 10. Red Flowering Gum. 11. Mountain Bell. 12. Pansy Flower. 13. Hop Grass.

a covering of thick white down that the sun's rays are resisted, or by deep penetrating roots to reach underground water. Sturts desert pea (*Chianthus Dampieri*) with scarlet claw-like flowers is most showy. The smoke bush (*Comesperma*) is entirely white. The pituri (*Duboisia Hopwoodii*) with strange medicinal properties is sought after by aborigines. There is a desert peach or quandong (*Fusanus*), various emu-bushes (*Eremophilas*), and numerous everlastings (*Helipserums*).

Large stretches of country are covered with saltbush and bluebush. Under these names there are several kinds of *Atriplex* and *Kokia*.

In the midst of this unique flora many aliens have established themselves. The worst aggressor which spread with alarming rapidity is the prickly pear. The first escape was in 1882, and in forty years it covered over 7,000,000 acres in Queensland and New South Wales, and vast sums have been spent in eradicating it. The water hyacinth (*Eichhornia* or *Pontederia*) has blocked a whole river in twenty years, and blackberries are a dreadful pest.

POLITICAL AND SOCIAL ORGANIZATION. The basis of government of the Australian Commonwealth as a whole is embodied in a Federal Constitution, drawn up in 1899 and given Royal assent in 1901. Each of the seven states—Queensland, New South Wales, Victoria, Tasmania, South Australia, and Western Australia—has its own Parliament, its own well-ordered system of local administration, embodied in shire and municipal and city councils.

Responsible government dates from 1855. Complete national autonomy was recognized in the Statute of Westminster, 1931.

Politically and sociologically, Australia is a rock-solid adherent to the British Imperial system and utterly loyal to the Crown. The Crown is represented comprehensively by a Governor-General, individually by a Governor in each of the states.

There are sound reasons, both economic and geographical, for Australia's support of the Dominion system of which it is a self-governing member. It is about two-thirds the size of Europe, including Russia, with a population not as large as that of Greater London. Just across the Timor Sea, a tightly-packed Asia looks jealously at the fertile acres which have not yet been opened up for close cultivation, but a "White Australia" policy—one of Australia's most jealously-guarded political ideals—bars the Asiatic as a permanent settler.

Another factor of vital importance in Australia's firm adherence to the Imperial system is that 98 per cent of the population is of British ancestry—the proportion being approximately 60 per cent English, 20 per cent Irish, 16 per cent Scottish, and 4 per cent Welsh.

To get a really comprehensive idea of the Australian national character and constitutional make-up it is necessary briefly to review the events which have led to the development of an independent nation in the relatively brief span of 150 years.

When Admiral Arthur Phillip was commissioned to found a settlement on the shores of Botany Bay, it was mainly that the British Government might use the place as a dump for the human flotsam and jetsam which could no longer be accommodated in the overcrowded gaols and the heavily-freighted convict hulks of England.

Phillip sailed with eleven ships, set up his



PRINCES BRIDGE, MELBOURNE, IN 1855

The picture is from the south side of the Yarra River and is from an old print published by Huxtable and Co.

Australian National Travel Association



PARLIAMENT HOUSE, CANBERRA

This building is actually intended temporarily to fulfil its present duties, it will be converted to other uses when the new Parliament House is built

Photo: Government of New South Wales

colony on the shores of Port Jackson—Botany Bay having proved quite unsuitable—and was apparently forgotten by the Home Government for two years. When, at length, supply ships and reinforcements for the garrison arrived, the settlement was on the verge of starvation.

As the colony grew, free settlers and adventurous men of substance began to supplement the batches of convicts. Exploration and big-scale settlement started. But for a time a graft-rotten military clique—the New South Wales Corps—held sway. Bligh (of the *Bounty*) was sent out to take a firm line and stop the rot. Instead, he unwittingly started a revolution, of which John Macarthur, a wealthy member of the New South Wales Corps—who introduced the merino sheep to Australia—was the pivot. Bligh was deposed and packed aboard an England bound ship. For a time it looked as though the officers, many of whom were also wealthy settlers, could continue to defy the British Government. Bligh re-proclaimed himself governor as soon as the ship was clear of Sydney Heads. He made for Tasmania, where he unsuccessfully attempted to gain the sympathy of the man in charge, Colonel Collins. For months afterwards he sailed the coasts of New South Wales and Tasmania. When he heard that Lachlan Macquarie had arrived from England to supplant him as governor, he returned to Sydney. Macquarie treated him well, but was pleased to see him at last bound for England in earnest. Macquarie, succeeded in smashing the infamous New South Wales Corps, without completely disrupting the internal life of the colony. He was the last of the autocratic governors.

Towards the end of Macquarie's term of office, the free settlers, who were arriving in

ever-increasing numbers, began an agitation for a legislative voice. The agitation continued to grow, and in 1823 the British Government passed the New South Wales Judicature Act, which enabled the governor to appoint a legislative council. This council could not initiate legislation. It was simply an advisory body.

The movement for real political freedom began in earnest when William Charles Wentworth, Cambridge barrister and zealous reformer, arrived in Sydney in 1824. The colony's only newspaper at that time was an official gazette, which was, naturally, the mouthpiece of the governor. Wentworth started a weekly in which he gave the news of the day free of Government House bias.

In 1828, the Legislative Council was enlarged and given power to reject the governor's political proposals; in 1830 trial by jury was established.

Meanwhile, reformers in England, as well as in Australia, were agitating for the abolition of transportation. Free settlers in New South Wales vastly outnumbered the convict population, and there was a growing consciousness of national destiny.

The pressure became so strong that, in 1840, an Order in Council was made discontinuing transportation to New South Wales.

Two years later, the elective principle was half-heartedly recognized by the British Government. The membership of the Legislative Council was increased to thirty-six, of whom twenty-four were to be elected by freeholders. The remainder were still to be Government nominees.

But the agitation for absolute freedom went on, and the real climax to years of incessant campaigning came in 1850, when Lord John Russell's Government passed the

Australian Colonies Government Act, which gave separate political entity and economic freedom to each of the individual colonies. This Act also enabled the newly-created states to set up freely-elected legislatures and to fix the franchise as it suited them individually. The only check the Crown retained was in a series of Legislative Councils, consisting entirely of Governors' nominees. These, having the power of veto, became the

in open rebellion at Ballarat. An Irishman, Peter Lalor, headed an international band which, determined to make the clash over the licences a far broader issue, entrenched themselves in what became known as the Eureka Stockade, proclaimed a republic, and settled down to fight it out. But authority was far too firmly entrenched, and Lalor and his little band, after a fight, were put to flight.

But the crushing of the Eureka rebellion fostered a feeling of comradeship and unity among the miners. This was later translated into a militant trades unionism, which was to have a far-reaching effect on the political development of the country.

The gold rushes changed the whole trend of Australian national development, which, before the roaring days of Bendigo and Ballarat, had been purely pastoral.

Hitherto, Australia had been a land in which the wealthy squatter had a reservoir of cheap and servile labour on which to draw at will, but individual prosperity—the direct outcome of the golden era—rapidly altered that. This individual prosperity did not, however, take the form of the rugged individualism of the United States. Instead, the trend was towards a pooling of strength, for the protection of the mass as well as the individual, and for the assistance of the weaker elements in the community.

Trades unionism continued in the ascendancy until 1890, when an obscure maritime dispute developed into a general strike. Soon a nation-wide battle between organized labour and united capital was raging.

The trades unions lost, but—as in the abortive Eureka rebellion—defeat led only to new strength. Convinced that direct action was useless, the vanquished trades unionists resolved to transfer the fight to the legislatures. The Australian Labour Party was born.

Industrial Australia was growing with amazing rapidity, and soon wages boards were set up to ameliorate conditions in a number of notoriously "sweated" industries. The wages board idea was the forerunner of to-day's complex system of arbitration courts.

Liberal and reformer, as well as undiluted labourite, were now represented in the various parliaments, and education was soon in the forefront as a national issue. "Free, compulsory, and secular" teaching for all crystallized from ideal to actuality. Government-run schools were established; Government-subsidized universities were founded.

Parallel with these developments was the growing movement for federation. The people were asked to vote on the question



TRAINING HORSES AT THE BUNDOORA POLICE REMOUNT FARM, VICTORIA

Photo. Australian National Travel Association

Australian equivalent of the House of Lords.

Simultaneously—and in spite of stern official discouragement—discoveries were being made that were to change the whole course of Australia's political and social development.

Paul Strezlecki, a Polish nobleman, found specks of gold in Victoria. Governor Gipps, fearing disorder, advised Strezlecki to say nothing about it. But officialdom was powerless to stem the tide of progress. Shepherds, cattle-musterers, post-hole diggers and farmers continued to find gold, in greater and still greater quantities.

The news travelled round the world, and soon hundreds of diggers began to arrive. Within a year, the arrivals had swelled to thousands a month.

The authorities introduced a licensing system which the miners thought unjust. Clashes between miners and police culminated



INTERIOR OF AN OLD BUSHMEN'S HUT

Photo: Agent-General for South Australia

in 1898 and again in 1899. The first referendum showed a solid majority in favour of uniting; the second resulted in a smashing victory for the federationists.

Queen Victoria signed the proclamation that the Commonwealth of Australia was to come into being on 1st January, 1901.

A group of colonies had developed the status of a nation.

In Australia to-day, the individual standard of living is, by European measurement, exceptionally high. As was the case with the miners of the 'eighties, individual prosperity has not led to an indifference to the well-being of the less fortunate. This spirit is reflected throughout the social services—the schools, the hospitals, in fact, in every branch of communal life.

Politically, the organized forces of moderate Conservatism and moderate Labour are about evenly balanced. Elections, in both Federal and State spheres, are, as a rule, lost or won on current issues. Seldom are governments put into office with crushing majorities—and the net result is a series of very "live" parliaments, in which the affairs of the nation are thoroughly thrashed out.

Australia is one of the most democratic of countries. Class distinctions are negligible—except among a microscopic minority

to which the nation as a whole pays not the slightest attention.

QUEENSLAND. See article, Vol. VII.

REID, SIR GEORGE HOUSTON (1845-1918).

Born at Johnstone, Renfrewshire, Scotland, at the age of nine he was taken by his parents to Australia. He

served as a clerk in a merchant's office, and in 1864 secured an appointment as an assistant in the colonial treasury. Free trade pamphlets written and published in 1874 won him the Cobden Club's gold medal. During these years he was studying law, and was called to the Bar at Sydney in 1879. He entered the Legislative Assembly in the following year, and in 1881 he became Minister of Public Instruction, initiating a system of higher education. Reid became Prime Minister in 1894 and remained in office until 1899. He introduced financial reforms and gradually



SIR GEORGE REID

Photo: Central

lowered the protective and revenue duties. For a time, in the federal government, he, a fervent free trader, and Deakin, a protectionist, formed a coalition government in opposition to the Labour Party. On the passing of the High Commissioner Act of



RELIGION IN THE BUSH

Dr. Head, Archbishop of Melbourne, conducting a service for farming communities in the State of Victoria.

Photo: Australian National Travel Association

1909 he was, in 1910, appointed Australia's first High Commissioner for the Commonwealth in London. He held this office until 1916 and, on relinquishing it, became a member of the British House of Commons.

RELIGION. The homogeneous character of Australia's population is reflected in the religious statistics of the Commonwealth, which reveal that, of the 6,500,000 people, an overwhelming proportion return themselves as attached to one or other of the Christian Churches. The 1921 religious census returned, in round numbers, 2,370,000 as Anglicans, 630,000 Presbyterians, 630,000 Methodists, 630,000 other Protestants, 1,130,000 Roman Catholics, and 21,000 Jews. These numbers would be larger to-day, but the proportion would not vary in any marked degree.

There is no State subsidy to religion in Australia, and the churches are organized as voluntary associations empowered, by Acts of the various state legislatures, to make regulations for their own internal government and well-being. The life of these voluntary religious societies is marked by vigour and enthusiasm, and by a continuing record of growth with the advancing material development of the people. The Government preserves neutrality on all issues of religion, there is a complete absence of any preferential treatment of particular religious groups. In the great cities there is a general and increasing desire to take common action in all matters of public welfare, in which joint

action by the churches is needed to promote social service, or attack public evils. Councils of Public Morality are at work in many of the larger Australian cities, and embrace in their membership men and women of the most various religious persuasions. This sense of civic and social responsibility is, indeed, a characteristic of the religious consciousness of Australians.

In addition to social action of this communal type, the individual churches are severally organized for their own activities of education and charity. Each denomination has naturally its own ministerial and pastoral organization which builds churches, schools, and parsonage homes, and sustains hierarchies, central administrations, and local pastorates with no assistance from the State. But the churches occupy far more extensive fields than the pastoral and parochial. In the field of primary education, the Roman Catholic Church builds and supports its own schools at very great personal cost to its own membership. In the field of secondary education all the churches are active in the maintenance of magnificent secondary schools for boys and girls, where, indeed, they anticipated action, in the realm of secondary education, by the State. In the field of university education, the churches have combined with the work of the great State universities, in providing residential colleges at all the universities, which are an out-



"SKY-PILOT"

Langford-Smith, the flying priest of Arnhem Land, Northern Australia, provides proof of the "airmindedness" of Australians, particularly in the "out back."

Photo: Australian National Travel Association

standing feature of the life of Australian universities to-day. Homes and orphanages of all kinds, built by the churches, and sustained by the voluntary offerings of their members, and hospitals, public and private, are to be found not only in the great cities,

but in centres far remote from the great masses of population, and supplement invaluablely the works of charity and mercy undertaken by the State.

Very considerable sums of money are raised annually by the churches for social work in congested city areas, and for missionary purposes outside Australia. Much of this money goes to the farthest ends of the world, though Australian churchmen feel naturally a special obligation towards the evangelization of the Pacific, and especially of the islands of Melanesia and Papua and the mandated territories of New Guinea.

There are no tendencies to race-hatred in Australia, and the small constituency of Jewish religionists lives in peace and concord with its Christian neighbours.

No survey of the religious life of Australia would be complete without some mention of the efforts of the churches to minister spiritually to the people of the distant "out-back" areas and the dwellers in what is known in Australia as "the bush." Here, again, the Australian instinct for practical religion reveals itself, for many of those spiritual agencies are associated with medical and nursing services designed to ameliorate the living conditions of these lonely pioneers of the rugged hinterlands of Australian life. There are the religious Orders of the Roman Catholics, the religious communities and the remarkable "Bush Brotherhoods," and the "Bush Church Aid," of the Anglicans, and the "Home Mission" societies of the other churches. Outstanding among the last are the "Far-West Mission" of Rev. H. Drummond, a Methodist Minister of New South

Inland Mission, who has brought to the people of Central Australia not only the consolations of spiritual religion, but also a ministry of "flying doctors," and a system of nursing-centres.

All this and much else, suggests the existence in Australia of forms and agencies of



UNUSUAL ARCHITECTURE IS A FEATURE OF THE METHODIST CHURCH AT MILDURA, VICTORIA
Photo: Australian National Travel Association

organized religion, marked by vitality, idealism, and aggressiveness. The Australian religious spirit puts an emphasis on good works. Yet it is not indifferent to the more aspiring and sacramental moods of faith, as its magnificent cathedrals and churches, still rising up beside its great commercial buildings, abundantly suggest. Nor is it inhospitable to new forms of faith, as its welcome to such movements as Christian Science and Theosophy equally reveals.

A complete review of the religious situation in Australia must also make mention of the aboriginal population of the Commonwealth, and some mention of its tribal and religious customs and the reaction upon it of Christian influences, and agencies of help. The aborigines of Australia are, to-day, a remnant, and a dwindling one. They are to be found mostly in Central and Northern Australia.

The aborigines are a primitive, but by no means a degraded, people, though they deteriorate almost inevitably in contact with a white civilization. In his native surroundings, and in terms of his own primitive religion and culture, the aboriginal's morality is high, he is by nature modest, unassuming, and gay, and he is in his amazing bushcraft, observant, active, and self-reliant. In his tribal life, religious ceremonies of a most exacting nature, and making supreme demands on personal courage, mark the accession of youths to adult status. Magic, totemism, and an elaborate system of family relationship and obligation all play a part



NEW NORCIA MONASTERY, WESTERN AUSTRALIA
Photo: Australian National Travel Association

Wales, who has devoted his life to the task of bringing children from the far west of New South Wales to the Sydney coast for medical treatment and annual holidays; and the work of Dr. Flynn, of the Presbyterian

in his religious sanctions. Belief in re-incarnation is general. There seems to be a general belief in superior beings, but no form of prayer is made to them, nor do they seem to have anything to do with the inculcation of moral precepts. The Christian churches in



THE TOWER OF THE ANGLICAN CHURCH IN
ST JOHN STREET, LAUNCESTON, TASMANIA
Photo Australian National Travel Association

Australia have been unceasing in recent generations, in their efforts to minister to this scattered remnant, and to secure for them, in conjunction with governments, an adequate justice and protection. There are three distinct kinds of missionary work being carried on to-day among them—

1. The mission stations of the various churches. There are over thirty of these, and they are conducted by the Church of England, Roman Catholics, Presbyterians, Methodists, Lutherans, Seventh Day Adventists, and the Salvation Army.
2. Religious ministrations on the various Government Settlements, and reserves.
3. Ministrations among the still nomadic tribes.

RIFLE-BIRD. See article, Vol. VII.

ROBINSON, SIR THOMAS BILBE (born 1853). Industrialist. Born in England, he emigrated to Queensland in 1881, where he became engaged in industry and commerce, as well as taking an interest in the military

life of Queensland. He took a commission in the First Queenslanders, and ultimately became senior officer in Central Queensland. He was manager of the British India and Queensland Agency Co. in Brisbane, and partner in M'Ilwraith, M'Eacharn, of London and Melbourne. From 1910 to 1919 he was Agent-General for Queensland, and during the war years he was Director of Meat Supplies for the Allied Armies. He holds directorships of several companies.

ROSENTHAL, MAJOR-GENERAL SIR CHARLES (born 1875). Architect and distinguished Australian soldier. Rosenthal was born at Berrima, New South Wales, and in 1901 commenced to practise in Sydney as architect. He is a Past President of the Federal Council of the Australian Institute of Architects.

He joined the Australian militia in 1903, and in 1914 had risen to be a lieutenant-colonel. He left Australia with the Imperial Expeditionary Force in September, 1914, commanded the Third Field Artillery and the First Australian Division during the Gallipoli campaign, and served for the remainder of the war in France and Belgium. He commanded the Ninth Australian Brigade, and later the Second Australian Division. He was wounded on three occasions, gassed at Passchendaele, and several times mentioned in dispatches. On returning to Australia, he represented Bathurst in New South Wales, but was defeated in 1925. In 1932 he was appointed G.O.C. Second Division Australian Military Forces, New South Wales.

RYRIE, MAJOR-GENERAL SIR GRANVILLE DE LAUNE (born 1865). High Commissioner in Great Britain, 1927-32. He was educated at King's School, Parramatta. He joined the Australian militia in 1898, and when war broke out in 1914 he held the rank of colonel. He had taken part in the South African War (1900-1), when he showed conspicuous bravery and had been severely wounded. He was appointed to the command of the Second Light Horse Brigade in 1914, and took part in the Gallipoli battles. He led the same unit in Egypt and Palestine, distinguishing himself when, in April, 1916, he commanded the advance of the brigade in a successful and important engagement



SIR GRANVILLE RYRIE
Photo. Fox

with the Turkish Forces which had attempted to seize the Suez Canal. He also commanded the Australian Division Light Horse in Syria, and became G.O.C. Australian Forces in Egypt. He was wounded twice and mentioned in dispatches on five occasions. In 1919 he was awarded the K.C.M.G. From 1923-27 he commanded the First Cavalry Division, New South Wales.

SCULLIN, JAMES HENRY (born 1876). Labour leader and former Prime Minister. Born at Ballarat and educated at Mount



J. H. SCULLIN
Photo Central

Rowan School. He joined the Labour Party in 1903, and became the representative of Corangamite (Victoria) in the Federal Parliament in 1910. On his defeat in 1913 he took up journalism, and eventually became editor of a local evening paper at Ballarat. He re-entered the House of Representatives in 1922 as member for the

Yarra division of Melbourne, and in 1928 was elected Leader of the Federal Labour Party. He became Prime Minister and Minister of Industry in 1929, but was defeated in 1931. In 1935 he resumed his leadership of the Federal Labour Party.

SMITH, SIR KEITH MACPHERSON (born 1890). Air pilot. He was born at Adelaide. When he offered his services to the Australian Imperial Forces in 1914 he was rejected, but proceeded to England, where he joined the Royal Flying Corps. Later he transferred to the Australian Flying Corps. In 1919 he accompanied his brother Ross on the flight from England to Australia. Since then he has been engaged in the manufacture of commercial flying machines.

SMITH, SIR ROSS MACPHERSON (1892-1922). A distinguished Australian air pilot; he was born at Semaphore, in South Australia. On the outbreak of the World War he joined the Australian Imperial Force, and served throughout the Gallipoli campaign with the Third Light Horse. In October, 1916, he became an observer in the Australian Flying Corps, carrying out a series of long distance and hazardous flights in Allenby's campaign in Palestine. In November, 1918, he flew to India from Egypt, and surveyed the route to Australia as far as Timor. When the Australian Government offered £10,000 to the first Australian to fly from England to Australia, Ross Smith,

with his brother Keith and two Australian mechanics, completed the journey in November, 1919, arriving at Darwin after 135 hours' flying time. Ross Smith then planned a flight round the world, but the plane crashed during a trial flight.

SOLOMON ISLANDS. See article, Vol. VIII.

SOUTH AUSTRALIA. See article, Vol. VIII.

SPENCER, SIR WALTER BALDWIN (born 1860). Born at Stretford, in Lancashire, he was educated at Manchester and Oxford. In February, 1887, he was appointed to the chair of biology at Melbourne University, and in 1894 he journeyed with Horn to Central Australia. He worked with F. J. Gillen in 1899 in a study of the native tribes of Central Australia, and in 1892 he and Gillen crossed Australia from South to North to study other little known tribes. From 1904 to 1911 he was President of the professorial board of the University and a member of the Council. In 1919 he resigned his chair and was made Emeritus Professor. His many publications include *The Native Tribes of Central Australia*, *The Northern Tribes of Central Australia*, and *The Presence and Structure of the Pineal Eye in Lacertilia*.

SPORTS AND PASTIMES. Due mainly to the great performances of her cricketers, tennis players, and—in other years—her swimmers, rowers, runners, boxers, and footballers, Australia has become known as one of the outstanding countries of the world as far as sport is concerned.

But Australia to-day, apart from cricket and tennis, can no longer be considered a "world force" in sport. Perhaps it is only a temporary eclipse, but the Olympic Games of 1936 in Berlin proved that at the present time Australia, in nearly all competitive sports, is lagging behind the rest of the world. The best the Australian team could do was to gain one third placing—Jack Metcalfe, who, before the games, held the world's record, finishing third in the hop, step and jump event.

The rest of the Commonwealth's representatives, her track and field athletes, her boxers, her wrestlers, swimmers, and rowers were simply not in the picture. It was a big blow to Australia's sporting prestige.

There has not been any decline in Australian standards; what undoubtedly has happened is that Australia has remained stationary while other nations have gone ahead. The main reasons are that Australia lacks skilled coaches and the facilities for proper and systematic training which present-day standards require. Another and very important reason is that the average Australian will not train and submit to the



SPORTS AND PASTIMES

Sport plays a big part in Australian life—a bigger part than it plays in most other countries. 1. "Joe" Caldwell, a winner of the tree falling contest. 2. Mackerel fishing off Heron Island, Queensland. 3. J. Bromwich of New South Wales. He is regarded as a coming champion in the tennis singles at Wimbledon. 4. On the beach at Victor Harbour, South Australia. There are unlimited facilities for all surf sports. 5. A Sydney life-saving team. Their services often are needed for the seas are big, the undertows strong, and danger from the shark is ever-present. 6. Surf riding in Australian waters calls for courage, skill and strength. 7. Yacht racing, a favourite sport. 8. Inter-University hockey match. Play between Adelaide and Brisbane, at Melbourne. 9. A "station" polo match.

Photos: Government of New South Wales; Australian National Travel Association;
"The Australian," Melbourne; Fox



SYDNEY CRICKET GROUND

Cricket is generally accepted as the national sport. No other event arouses the interest of all sections of the people as does a test match with England.

Photo: Government of New South Wales

stern sporting discipline as will the athletes of many countries, such as America, Germany, and Japan. There can be no question, however, as to the keenness and interest in sport in Australia. Sport plays a big part in the life of the average individual—a bigger part than in most other countries.

A cynic once remarked that Australia's national pastime is horse-racing. Horse-racing, however, cannot be regarded as a national sport, even though the interest in the "sport of kings" is no greater anywhere in the world than in the Commonwealth. If a national sport is the sport played by the greatest number of people in any particular country, then tennis is Australia's national game.

But somehow or other cricket is generally accepted as the national sport. Because of the appeal of "big cricket"—that is test cricket—to all sections of the people, even to those who know little about the game, the English game that Australians have learned to play so well must be considered the national sport. No other event creates such widespread and intense interest as a series of tests between England and Australia, no matter whether the game be played at home or abroad. Figures tell the story. In

1936-37 when Allen's team was in Australia, 78,630 were present on one day of the third test played in Melbourne. This is a world's record for cricket. When Australia plays in England many thousands of enthusiasts think nothing of sitting up all night to listen to the broadcast descriptions of play. Climatically, Australia has much in her favour. Cricket can be played for eight months of the year, and even in the cities there is no shortage of grounds, nor is there any dearth of material. In Sydney over 15,000 juniors alone play competitive cricket every season.

Except for inter-state and international cricket, first-class matches are confined to Saturday afternoon games between various clubs. County cricket as England knows it does not exist in Australia. Yet though the Australian cricketer plays only once a week in club games, the first-class cricketer obtains plenty of practice. Most clubs make it more or less compulsory for players to attend practice at least once a week. Like English, Australian cricket has known lean years as well as years of plenty, since the test series began in 1877, but an Australian test team can always be relied on to make a brave showing against any country. At the end

of the 1937 season Australia had won fifty-six tests to England's fifty-four. Cricket's roll of fame, past and present, includes many illustrious Australian names—Bradman, Trumper, Macartney, Clem Hill, Duff, McCabe, O'Reilly, Noble, Cotter, the Gregorys, Oldfield, are a few who come to mind as being equal to any cricketers the world has known.

In tennis Australia ranks with the leading nations, and seldom fails to issue a serious challenge for the Davis Cup, a trophy which she has won on six occasions. She has not won the Cup since 1919, but her players to-day still compare with the best. Jack Crawford, Quist, McGrath, and Bromwich, and others have taken the place of such masters as Norman Brookes, Gerald Patterson, O'Hara Wood, and J. O. Anderson. In Sydney alone there are 30,000 competitive hard court players, while it is impossible to estimate the number who play just to have a game. As with cricket, the Australian climate is suitable to tennis. It can be played on outdoor courts all the year round.

The football codes with the most followers in Australia are Australian Rules (which as the name suggests is peculiar to Australia), Rugby League, and Rugby Union. The interest in Soccer is growing, but it is doubtful if it will ever become so popular as the

other codes. New South Wales and Queensland are the Rugby states, the Australian Rules game holds sway in Victoria, South Australia, West Australia, and Tasmania. Australian Rules, a game of eighteen men aside in which the highlights are "marking" and spectacular drop-kicking for goals, attracts huge crowds. Australian Rugby, both Union and League, is more "open" and spectacular than the styles of other countries, mainly for the reason that the rivalry between the two codes is such that the players have to play, to a large extent, to please the public.

A number of Rugby Union teams have made overseas tours with creditable results. In 1908-9 a team under the captaincy of Dr. H. M. Moran toured Great Britain, and of thirty-one matches played, won twenty-five. Dr. Moran's team ("The Wallabies") played two Internationals, defeating England, but losing to Wales. The next Rugby Union side to go overseas was A. C. Wallace's team, "The Waratahs," in 1927-28. That team won twenty-four of thirty-one matches, beating Ireland, Wales, and France, and losing to Scotland and England.

The Rugby League formed in 1907 has regular exchange of visits with England, but only twice—in England in 1911-2 and in Australia 1920—has it won the "ashes."



RACING ON THE ONKAPARINGA COURSE, SOUTH AUSTRALIA

Interest in "the Sport of Kings" is as great in Australia as anywhere in the world, but horse racing is not the national pastime.

: Australian National Travel Association



AUSTRALIAN FOOTBALL

Rugby League and Rugby Union football are played extensively in Australia, but the photographs above are of the Australian Rules game, which is peculiar to the country and of which the highlights are "marking" and spectacular drop kicking for goals.

Photos: Australian National Travel Association; Topical

Like Australian Rules, another sport which can truly be called "national," in that it is typically Australian, is surf racing. With beaches and surf unequalled anywhere, Australians have unlimited opportunities for all descriptions of surf sports. In the summer season there is a surf carnival practically every week in some parts of the country, and once a year the Australian championships are decided. Surf sports include surf swimming races (a gruelling pastime in which the competitors race down the beach, wade into deep water, swim up to buoys moored outside the line of breakers, and back again to finish with a sprint to the finishing line), surf-boat racing, rescue and resuscitation events, and life-saving drill competitions. The surf swimmers all belong to clubs, and these clubs render invaluable service in protecting lives.

It is the proud boast of the Surf Life Saving Association that since the formation of the organization in 1907, the members of clubs affiliated to the body have saved over 33,000 lives. Though they patrol all the popular beaches and guard lives, the life-savers are not paid for their services. Surf boat and surf swimming of a competitive nature are not for weaklings. They are sports that call for courage as well as strength and stamina, for often the men compete in big seas, and fight against treacherous undertows. And always there is the danger of sharks.

STEVENS, BERTRAM SYDNEY BARNSDALE (born 1889). Statesman. Educated at Fort Street High School, Sydney, he eventually became an Inspector of the Public Service and Under-Secretary and Director of Finance. He was elected member of the Legis-

lative Assembly for Croydon in 1927, and for two years was Assistant Treasurer. During 1929 and 1930 he was Treasurer, and in 1932 he became Premier and Colonial Treasurer for New South Wales.

STREETON, ARTHUR (born 1867). Well-known artist. Born near Geelong, Victoria, he studied at the Melbourne National Art School, and quickly became associated with a rising group of landscape painters. In

1897 he visited England and exhibited at the principal European exhibitions. He was an official artist with the Australian Imperial Forces in France during the World War. One of his best known works is *Golden Summer*. Many of his paintings can be seen in the Sydney, Melbourne, and Adelaide galleries.

STURT, CHARLES (1795-1869). Famous explorer. He was born in India and educated at Harrow. He served as an ensign in Spain, France, and Canada, and arrived at Sydney with the 39th Foot in 1827. Darling at once made him A.D.C. and Military Secretary, and sent him out on a number of exploratory expeditions. Sturt traced the course of the Macquarie river and the Murrumbidgee. The hardships he endured in



B. S. B. STEVENS
Photo: Fox

these and other travels ruined his health and rendered him nearly blind. He had to resign his commission, and in 1834 he was granted 5000 acres at Mittagong in New South Wales.

When stronger in health Sturt made other journeys, one into the centre of the continent. After serving as Colonial Secretary he retired in 1853.

SWAN, BLACK. See **SWAN**, Vol. VIII.

SWAN RIVER. A river of Western Australia. Of no great length, it is important since two of the state's largest cities, Perth and Fremantle, lie on its banks. As it receives as tributaries eleven other rivers which flow constantly, it maintains an even flow and can be navigated by smaller boats as far as Perth, about 12 miles from its mouth.

SYDNEY. See article, Vol. VIII.

SYME, DAVID (1827-1908). A prominent and influential journalist. He was born at North Berwick, in Scotland, and after studying at Heidelberg, became a reader on a Glasgow newspaper.

Reports of discoveries of gold attracted him to California in 1851, and to Melbourne in 1852. There he and his brother bought the *Age* newspaper, and after 1860, when Ebenezer died, Syme devoted the whole of his energies to editing his journal. It was radical in its views, demanded protective tariffs, high wages, adult suffrage, and many other reforms.

After Federation, Syme advocated compulsory military service and an Australian Navy.

TASMANIA. See article, Vol. VIII.

TASMANIAN DEVIL. See article, Vol. VIII.

TASMANIAN WOLF. See article, Vol. VIII.

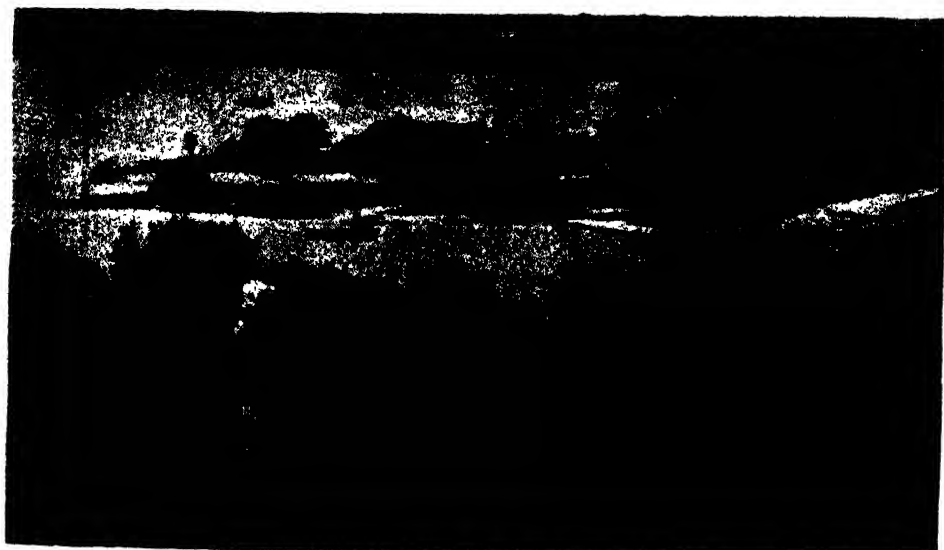
TOOWOOMBA. A city of Queensland, it is in high country 101 miles from Brisbane. It has various small industries which cater for local needs. Its high position on the Downs leaves it open to breezes which temper the summer heat and it attracts numerous summer visitors from the coastal plains. Population, 30,000.

TORRENS SYSTEM. See article, Vol. VIII.

TRADE. In the market-places of London, Tokyo, Birmingham, and Java, the housewife with her shopping basket has learnt something of how Australia's population of 6,700,000 earns its living.

She knows, perhaps vaguely, that somewhere in that vast continent men are working in orchards and vineyards to produce the apples for her table and the raisins and sultanas for her cakes; that from farms on grassy plains and bushland, from outback stations in the north and fertile wheat belts in the south they are sending the beef and mutton, butter, cheese, and flour that she buys in the shops.

To the seaman in a grain ship Australian trade means wheat—rivers of wheat poured into the holds from silos along Sydney's fourteen miles of wharves and sucked out



SWAN RIVER FROM KING'S PARK, PERTH

Both Perth and Fremantle are on this river, which is navigable for about twelve miles from its mouth
Australian National Travel Association

again in the Port of London or the Manchester Ship Canal docks. Dockers on the Humber or at Yokohama associate Australia with wool. Owners of Lancashire textile factories think of Australia as their best customer for some kinds of manufactured cotton goods. In Sheffield and Birmingham the makers of all kinds of hardware, from razor-blades to road-rollers, are studying the needs of the Australian market, while the makers of factory tools and factory machinery are busy providing Australia's secondary industries with the plant which enables them to make their own razor-blades and road-rollers.

Such is the import and export trade as it affects people all over the world. Unromantically expressed by the Commonwealth statistician, Australian trade would be—

Year	Imports	Exports	Value of Factory Production
	£B ¹	£B ¹	£A ²
1932-33	58,013,860	96,597,225	119,203,148
1933-34	60,712,926	98,572,632	129,091,915
1934-35	74,119,496	90,225,168	143,527,197
1935-36	85,249,956	108,907,225	—

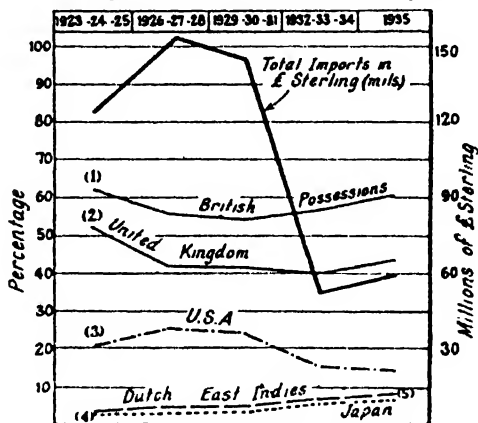
¹ B = British currency.

² A = Australian currency.

These exports, to be described later in some detail, consist mainly of agricultural and pastoral products—wool, wheat, butter, meat, fruit—and minerals, gold, silver, zinc, lead.

Chief among the imports are piece goods (of cotton, silk, and wool), chemicals and

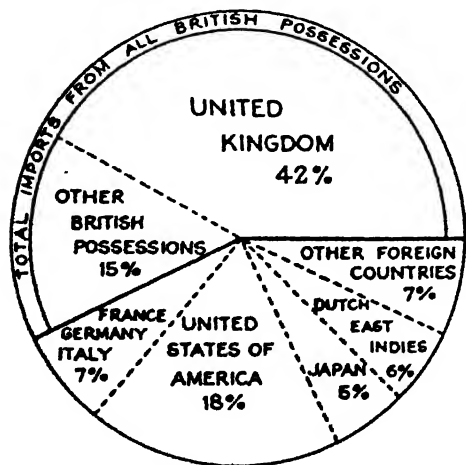
place beside those for exports and imports, represent local manufactures of a very wide range of factory products. They have their place here because they represent also a comparatively recent, but extremely important, aspect of Australian development



whose restrictive effect on imports, already apparent, is likely to increase. See INDUSTRIES, page 4650.

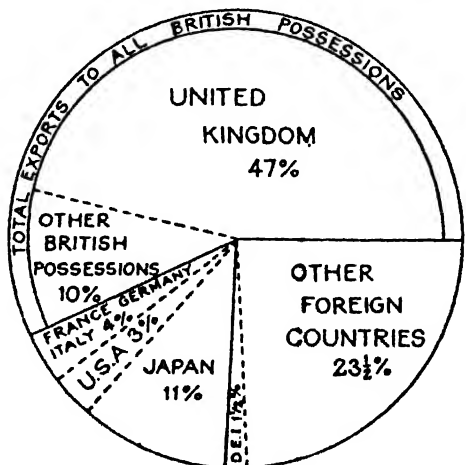
The destinations of these exports and the sources of imports involve nearly every country in the world in various degrees; but the circular diagrams reproduced with this article shows at a glance that the United Kingdom, the United States, Japan, and the Netherland East Indies are the countries with which Australia does the most business.

Trade with the United Kingdom. The United Kingdom is by far the most impor-



fertilizers, petroleum, motor cars, machinery, tea, tools, and paper.

The figures for secondary industry production, which here find a rather unaccustomed



tant single country both as customer and supplier. Australia is the third best customer of the United Kingdom and her second biggest supplier. Before the depression years

Australia was Britain's best customer, but the lead has since been taken by South Africa and India. Australia is, however, still Britain's best customer for cotton manufactures (other than piece goods, apparel, and yarns), for pottery and glass, hardware, paper, books, silk yarns and manufactures, carpets and vehicles. She is the second best customer for electrical goods, chemicals and drugs, and third best customer for cotton piece goods, machinery, and iron.

For the year 1934-35, Australia's sales to Britain were worth (in British currency)

Australia's favourable balance with other countries, out of reserves of money in London and by shipments of monetary gold.

This pressure of overseas debts is probably the most powerful of the four main forces which appear to be determining the trend of Anglo-Australian trade. The second—and complementary—force is Australia's need to develop, and in some measure protect, her own secondary industries. There is a temporary limit to the ability of Australia, the debtor, to buy from Britain, the creditor, paying simultaneously the current bill and the interest on past accounts. And since Australia cannot afford to buy more goods, she must make them or go without. Having decided to make some of them she thinks it is only logical to allow her young factories to mature under the shelter of tariffs.

Tugging against these two is another pair of forces: Empire policy and sentiment, particularly as expressed in the Ottawa agreement, and—complementary to it—knowledge that expansion of the British market depends to some extent on reciprocity.

The first two forces tend to restrict imports; the second two modify that tendency. It was the purpose of the Ottawa agreement to resolve these forces in such a way as to allow exports and imports to increase together.

Australia agreed at Ottawa to give United Kingdom manufacturers a margin of preference by increasing duties on foreign goods. She also agreed that tariffs should not be above a level at which United Kingdom manufacturers would have opportunities of reasonable competition, and that British exporters should have full rights of audience before the Tariff Board which was to give effect to these principles. Concessions granted by the British Government included increased preference to goods of Australian origin, and the list of commodities already entitled to preference was extended.

In the years since the agreement was signed Australia has removed import prohibitions and surcharges on a number of items, given the United Kingdom the advantage of increased preference on some classes of goods and directly reduced duties on others. Action has also been taken to offset the protective effects of exchange rates on British imports. It is claimed that these provisions in Australia's tariff changes have already given British exporters a new trade worth £3,000,000 a year.

Price fluctuations make it difficult to balance this with a corresponding estimate of advantages to Australian producers. The figures for 1933, however, are related to Ottawa in the following way by the Commonwealth statistician—



ANN STREET, BRISBANE

From Brisbane large quantities of wool, sugar, butter, cheese and meat are exported.

Photo: Australian National Travel Association

£50,770,000, and her purchases from the United Kingdom £30,789,000. This, at first glance, appears to have given Australia a favourable balance of £20,000,000. But it is a commodity balance only, and does not take into account interest on Government loans paid by Australia to British investors. The loans, chiefly to the various states, were for the financing of land development, including railways, roads, and irrigation. The interest is about £20,000,000 a year. To this debt must be added further payments to Great Britain for shipping and insurance services and for interest on other investments. The total is estimated at £30,000,000. This, in the year under review, put Australia £10,000,000 on the wrong side of the balance. The excess had to be paid for out of Aus-

"During the calendar year 1933 merchandise of Australian origin imported into the United Kingdom amounted to £48,551,240. Of this total approximately £29,200,000 represented goods which received preferential tariff treatment over similar goods from foreign countries. If these goods had been subject to the duties imposed on foreign goods, it is estimated that they would have paid approximately £5,090,000 more in duty. This represents a rebate of approximately 17.4 per cent on the value of imports receiving preferential treatment." See Introductory article, *Trade of the Empire*, page 4590.

Exports and Imports. It now remains to examine in greater detail the nature and value of these exports and imports.

Wool. About 150 years ago the first forerunner of Commonwealth statisticians recorded the existence in Australia of 29 sheep. There are now about 113,000,000; Australia has become the leading wool growing country. The sale of wool has become by far the biggest single item in the list of exports; and the price of wool the biggest factor in determining the amount of money available for imports.

During the year 1933-34 the value of wool sold by Australia (in Australian currency) was £57,111,449—nearly half of the total of all exports for the year and about the same as the total imports. Wheat, the next biggest item, realized £8,873,987, and butter £8,194,220.

Ninety per cent of Australia's wool is sold abroad, chiefly to the United Kingdom and Japan. The quantity exported in 1934-35 was just over 852,000,000 lb., with a total value of £39,256,940. The four biggest buyers were: United Kingdom, £16,007,777; Japan, £8,680,119; Belgium, £5,433,157; France, £3,558,066.

Some idea of the importance of wool prices to Australian prosperity may be gained by noting what happened during the worst of the depression period. In 1930-31, 2,600,000 bales fetched slightly more than £32,000,000.

Five years previously the same number of bales had realized £63,000,000.

Wheat, the principal crop raised in Australia, absorbs 70 per cent of the area used for agriculture. During the ten years ending 1934, the average area under production for wheat was 13,838,294 acres, and the average yearly production for the period was 164,005,919 bushels. The highest export value during the period was £19,220,000, in 1931-32. The lowest was £8,873,987, in 1933-34. The United Kingdom buys an average of 50,000,000 bushels a year; Japan,

the next biggest buyer, has fluctuated from 2,000,000 to 17,000,000 bushels. Britain and the Dutch East Indies are the best customers for Australian flour. In 1933-34: United Kingdom, 136,677 tons; Dutch East Indies, 80,623 tons. The total export of flour for that year was valued at £3,266,000.

Butter. The average annual production of

butter rose from 250,150,000 lb. for the quinquennium, 1920 to 1924, to 382,000,000 lb. in the five years ending in 1934. The largest production of butter in Australia was recorded in 1933-34, when the total amounted to 419,675,000 lb. The production of cheese in 1933-34 was 38,476,493 lb., as compared with 36,933,306 lb. during the previous year, and was the greatest quantity produced in any year. In 1935 the United Kingdom bought 93 per cent of Australia's total butter exports. Eastern countries bought 5 per cent. The quantity supplied to the United Kingdom in 1933 amounted to 1,691,662 cwt., or 21 per cent of the total importation. The Australian contribution was valued at £6,525,456, and was exceeded only by that received from Denmark and New Zealand. Cheese to the value of £249,959 was sent from Australia to the United Kingdom in 1934. To eastern countries Australia sent in 1933-34: butter, £486,875; cheese, £18,526.

Gold comes next on the export list. About £670,000,000 worth of gold has been produced in Australia since its discovery in 1851. In



SULTANAS
Cleaning, stemming and grading at the Mildura Co-operative packing shed.

Photo: A.

Trade Publicity



AUSTRALIA'S TRADE

Her exports and her imports affect nearly every country in the world in some degree. She is the third best customer of the United Kingdom and her second biggest supplier. While on actual trade balance Australia makes about £20,000,000, this is rather more than offset by interest on loans and shipping charges. 1. Sydney harbour bridge at the gateway of Australia. 2. At the docks of Port Melbourne. 3. Silos at White Bay, Sydney, from which rivers of wheat pour into the holds of grain ships bound for Europe.

Photos: Government of New South Wales; Australian National Travel Association; Australian Trade Publicity

the past five years the export value has fluctuated from £8,000,000 to £26,000,000.

Meat. Australia exports only about 20 per cent of her beef production, 25 per cent of mutton and lamb, and approximately 6 per

cent of pig products. The quantity and value of exports for 1934-35 were: beef, 94,651 tons, £2,547,342; mutton and lamb, 87,589 tons, £4,475,709; pig products, 7678 tons, £500,131. Of these amounts the United

Kingdom took 90 per cent of the beef, 98 per cent of the mutton and lamb, and 97 per cent of the pork.

Hides and Skins. The value of cattle and horse hides, sheep and other skins exported during the five years ending 1934-35 averaged a little more than £3,000,000 a year. France has been the best customer for sheep skins, with the United Kingdom second. Consignments of cattle and horse hides in 1934-35 were distributed as follows: Japan, £107,983; U.K., £102,488; Italy, £80,288; Finland, £47,609; other countries, £78,073.

Dried Fruits. Annual exports of dried fruits during the three years ending 1933-34 averaged 54,238 tons, equivalent to 80 per cent of production. This figure was made up of: sultanas, 37,578 tons; currants, 13,216 tons; lexias, 3444 tons. The United Kingdom bought 38,149 tons, or 70 per cent. Canada and New Zealand were next with 12,397 and 2817 tons respectively. For the five years ended in 1934 Australian currants represented 19 per cent of the total imported by Britain, and raisins 38 per cent.

Fresh Fruits. Apples constitute the bulk of the fresh fruit exports, although the exports of citrus fruits and pears are fairly considerable. The value of the export trade is about £2,000,000 a year. The United Kingdom market absorbs over 80 per cent of apple exports. Figures for 1935 were: to U.K., 3,795,667 bushels; Continent, 373,359 bushels; eastern countries, 115,978; Pacific Islands, 4580; other countries, 73,758.

Sugar. For some time Australia has exported an average of nearly 300,000 tons of

has been trebled in five years. It is now about £1,250,000 a year. In 1934 the United Kingdom imports of Australian eggs in shell were worth £1,187,000, representing 17 per cent of total imports.

Lead. Exports of lead are fairly constant at about £2,500,000. In 1934 the figure was



SHIPPING COTTON, BIRT'S WHARF, SOUTH BRISBANE

Photo. Agent-General for Queensland

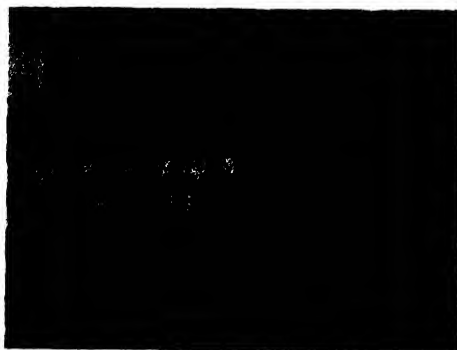
£2,418,072. More than 90 per cent of it went to the United Kingdom.

Wine. The progress in the wine export trade is emphasized by the fact that, whereas 881,469 gal. were shipped during the year 1924-25, the total annual average for the next five years was 2,500,460 gal. This increased to 3,046,825 over the five years ending with the 1934-35 season. For the four years ending 1935 the exports to the United Kingdom represented 95 per cent of the total.

Other Exports. Include silver, preserved fruit, tobacco, pearlshell, sandalwood, tallow, copper, zinc, leather, timber.

Imports. Total, £74,119,496. The principal imports 1934-35 (values in British currency): Textiles, £13,209,200; metals and manufactures, including cars, £12,715,163; machinery, £6,569,881; petroleum, £3,170,070; tobacco, £1,342,239.

The biggest suppliers are (values in sterling for calendar year 1935): United Kingdom—apparel, textiles and manufactured fibres, £9,351,513; spirituous and alcoholic liquors, £585,657; metals, metal manufactures, and machinery, £12,259,362; earthenware, cements, china, glass, etc., £778,540;



WOOL BUYERS AT THE ROYAL EXCHANGE, SYDNEY
Photo: Fox

raw sugar a year, nearly all of which is sold to British refiners. The balance goes to Canada. The export value of cane sugar keeps fairly steadily at about £2,000,000 a year.

Eggs. The export value of Australian eggs

paper and stationery, £3,102,866; drugs, chemicals, and fertilizers, £1,861,164. Total with other items, £33,061,501. United States—tobacco and preparations thereof, £1,519,137; oils, fats, and waxes, £1,886,889; metals, metal manufactures, and machinery, £5,770,295. Total with other items, £12,367,689. Japan—apparel, textiles, and manufactured fibres, £3,305,469; earthenware, cements, china, glass, etc., £235,823. Total with other items, £4,769,776. Netherlands East Indies—foodstuffs of vegetable origin and non-alcoholic beverages (tea), £1,153,383; oils, fats, and waxes, £3,118,001. Total with other items, £4,649,753. Canada—metals and metal manufactures and machinery, £1,935,266; wood, raw and manufactured, £723,427; paper and stationery, £878,124. Total with other items, £4,579,112.

A comparison of the United Kingdom's position in the import trade of Australia must be restricted to those classes of goods which are produced or manufactured in the United Kingdom, and the above figures include commodities in which Britain does not compete. Tea, rice, raw coffee, and petroleum are important items which swell the total import figures and reduce the apparent percentage of Britain's share.

VAN DIEMEN, ANTHONY. See article, Vol. VIII.

VAN DIEMEN'S LAND. See TASMANIA, Vol. VIII.

VICTORIA. See article, Vol. VIII.

VOLUNTEERS, AUSTRALIAN. See VOLUNTEERS, Vol. VIII.

WAKEFIELD, EDWIN GIBRON (1796-1862). Pioneer of colonization in South Australia and New Zealand. Born in London, he was educated at Westminster and Edinburgh. Twice in his youth he eloped with heiresses, being sentenced on the second occasion to three years for abduction in Newgate gaol. While in prison, he wrote anonymously for the London *Morning Chronicle* a series entitled "Letters from Sydney," in which he attacked the land grant system and the exportation of convicts. When these letters were later published, they were believed to be the work of an Australian expert. The chief feature of his theory was that land prices should be low enough to attract capitalists to emigrate, yet high enough to ensure that land should not too easily pass into the ownership of the labouring classes, thereby destroying the supply of labour. The proceeds of these sales were to form a "land fund" to assist settlers. He further believed that the colonists should be given responsible and representative government. In 1830 he and his followers formed the National Colonization Society,

and though his views were never put into actual practice, the British Government settled 50,000 people in New South Wales and Port Philip in ten years, the cost being borne by sales of land in Australia; and it was largely owing to the activities of Wakefield that South Australia was developed. In December, 1833, he formed the South Australia Association, which led to the passing in 1834 of an Act by the Imperial Parliament to establish the "British Province of South Australia." He next turned his attention to New Zealand, and almost compelled the British Government to annex that territory. He emigrated to New Zealand in 1853.

WATSON, JOHN CHRISTIAN (born 1867). First Labour Prime Minister of Australia. Born at Valparaiso, he was brought up and educated at Oamaru, New Zealand. He crossed to Sydney in 1888, obtaining employment as a compositor on the *Star*, and became President of the local Trades and Labour Council, and later of the Australian Labour Federation. From 1894 to 1901 he was representative for Young in the New South Wales Legislative Assembly. He was then elected to the Commonwealth House of Representatives for the Bland, and in 1904 became Prime Minister, the first Labour leader to hold this position. He was, however, defeated after being in office for less than four months. In opposition, he dominated parliamentary proceedings by virtue of his great ability. In 1907 he resigned the leadership of the Labour Party owing to bad health, and in 1910 retired altogether from politics.

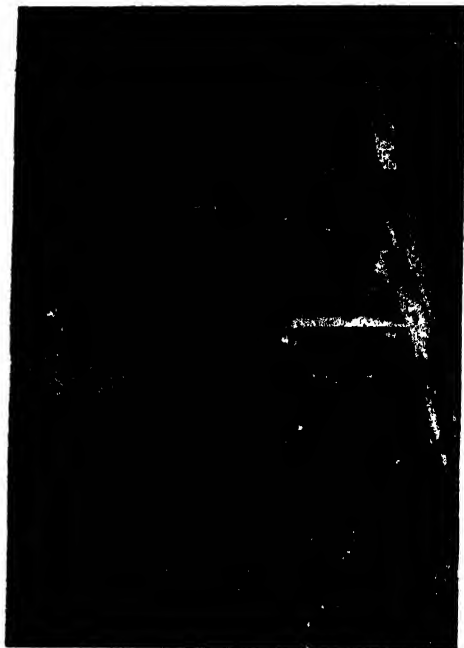
WENTWORTH, WILLIAM CHARLES (1793-1872). Born at Norfolk Island and educated at Greenwich, England. On his return to Australia he engaged in a number of exploratory adventures, but he journeyed back to England to study for the Bar, being admitted in 1822. He began to practise in Sydney in 1824, bought (in 1827) the Vaucluse estate on Port Jackson. Meanwhile one of his first acts had been to found the paper, *Australian*, in which he demanded constitutional government. After the death of Sudd, Wentworth carried on a three-year campaign against Darling, the governor, which resulted in Darling's recall. He next turned his attention towards agitating for representative government. Some of his proposals were adopted in the Constitution Act of 1842. In 1843 he was elected at the head of the poll as a "squatter" representative for Sydney, and he became leader of the Popular Party. On matters of public finance he soon came into conflict with Governor Gipps. Later Wentworth put in a claim for 20,000,000 acres, which he said he

had bought from seven chiefs in South Island of New Zealand for £200 per annum. Gipps refused to sanction the purchase on the ground that purchases in land from natives were no longer recognized. Wentworth then led a bitter campaign against Gipps, demanding that New South Wales should have self-government on the lines granted to Canada. He finally succeeded in getting the constitution approved in New South Wales, and he came to England to secure its passing by the British Parliament. In 1885 it became law. Wentworth for a short time became President of the Council but returned to England in 1862.

WESTERN AUSTRALIA. See article, Vol. VIII.

WHITE, THOMAS WALTER (born 1888). Soldier and air pioneer. Born at Melbourne and educated at Moreland School. He has a distinguished war record, serving with the first Australian flying unit overseas. He was taken prisoner by the Turks near Baghdad in 1915, and escaped from Constantinople in August, 1918. For his war services he was awarded the Distinguished Flying Cross and the Victoria decoration, and he was twice mentioned in dispatches. From 1926 to 1931 he commanded the Sixth Royal Melbourne Regiment. He is a foundation member of the Australian Aero Club. He represents Balaclava in the House of Representatives, and in 1933 was appointed Minister of Trade and Customs.

YARRA YARRA RIVER. A river in Victoria rising near Mount Baw Baw (5062 ft.)



THE YARRA YARRA RIVER NEAR MELBOURNE
Photo. Australian National Travel Association

in the Benambra Highlands in Victoria. It is 175 miles long and flows west, entering Hobson's Bay at Melbourne.

CANADIAN SECTION

ABBOTT, SIR JOHN JOSEPH CALDWELL (1821-1893). Prime Minister of Canada, 1891-1892. His public career began in 1860, when he became a member of the Assembly of Lower Canada. He was an authority on commercial and constitutional law.

ABERDEEN, JOHN CAMPBELL GORDON, 7th Earl of. See article, Vol. I.

ACADIA. See article, Vol. I.

AGRICULTURE AND FARMING. Development of agriculture in Canada, and the rapid strides it has made during the last one hundred years, can best be appreciated by considering the beginnings of settlement together with the present status of the industry. The first colonists landed in Acadia (now Nova Scotia and New Brunswick) in 1604 and Port Royal was founded the next year with forty-four settlers. In 1707 the population had increased to only 1473 persons, and the live stock numbered 2419 cattle, 2591 sheep, and 2055 swine. It will be seen therefore that farming during the first one hundred years progressed very slowly. There are few data available for this period.

It was not until 1757 that agriculture showed any appreciable development, but rapid progress was made in the next hundred years, during which time the frontiers of settlement were greatly extended in New Brunswick, Prince Edward Island, Quebec, and Ontario. The conquest of the western prairies began in 1811 when Lord Selkirk established the Red River settlement. Agricultural development in the West, however, was greatly retarded during the next sixty years through a series of unfavourable and disastrous circumstances. Better days followed, and the pioneers of western Canada were augmented by other settlers in ever increasing numbers, until the prairies were made to produce over 500,000,000 bushels of wheat in a single year. During the period 1871-1931, the population of Manitoba, Saskatchewan, Alberta, and British Columbia increased from about 100,000 to over 3,000,000, and the total population of Canada increased almost threefold.

Of the natural resources of Canada, the soil is by far the most important. In round numbers, the gross and net¹ values

¹ The net value is the gross minus a deduction from the field crop figures for the field crops fed to live stock, plus the value of agricultural seeds retained for sowing, plus agricultural products classified as non-merchandise.

of agricultural production for 1932 were \$703,253,000 and \$565,418,000 respectively. In terms of net production, this represents 26.86 per cent of the value of production from all industries, and 61.25 per cent of the "natural" products from agriculture, mining, forestry, fisheries, and trapping.

The gross agricultural wealth of Canada for 1935 is estimated at \$5,797,104,000. The total gross agricultural revenue of Canada is estimated at \$943,081,000 for 1935 as compared with \$942,565,000, the revised estimate for 1934. The distribution of revenue by items of production was as follows—

TABLE I
GROSS ANNUAL AGRICULTURAL REVENUE OF
CANADA¹
('000" omitted)

Item	1934	1935
	\$	\$
Field crops	549,080	506,614
Dairy products	183,791	191,496
Farm animals	99,438	120,078
Poultry and eggs	45,515	50,434
Fruits and vegetables	43,531	49,788
Tobacco	7,232	10,763
Fur farming	4,534	4,122
Maple products	3,040	3,522
Honey	2,245	2,025
Clover and grass seed	2,010	1,686
Wool	1,899	2,232
Flax fibre	250	321
Total	\$942,565	\$943,081

In 1930, Canada had a home market for about 60 per cent of her agricultural products, while fully 40 per cent entered into international trade. Of the latter, field crops or their manufactures accounted for 87 per cent, while 13 per cent was of animal origin. During the years of economic depression the ratio of domestic to foreign markets widened considerably, until in 1934 the home market utilized 83 per cent of production, only 17 per cent entering international trade. Of the total export trade, agricultural products account for approximately 40 per cent. Canada is an importer, also, of agricultural products, the most important items in order being fruits, rubber, tea, vegetable oils, coffee, and nuts. The ratio of agricultural exports to imports is approximately 3½ to 1. It is estimated

¹ Dominion Bureau of Statistics, 1936.

that, of the agricultural commodities imported into Canada, about one-half, in terms of value, cannot be produced in the country.

For the past fifty years there has occurred a gradual but fairly rapid change of population from rural to urban conditions. The census of 1891 showed that less than one-third of the people lived in urban communities. By 1921, the urban and rural populations were about equal. In 1931 the figures for rural and urban were 46.3 and 53.7 per cent respectively.

Soil—Climatic Zones. The settled agricultural areas of eastern and western Canada are widely separated geographically by a portion of the Laurentian plateau extending from the eastern side of Lake Huron, across northern Ontario, to the Manitoba boundary. This rocky and unproductive stretch of country, thrust between the older settled sections of eastern Canada and the more recently colonized western prairies, has exerted a profound influence upon the course of Canadian development.

Eastern and western Canada differ markedly in soil and climatic conditions, and hence in the types of farming which are practised. The accompanying sketch-map of eastern Canada shows the four main soil divisions, namely: (1) Laurentian Upland Podzols, (2) Appalachian Upland Podzols, (3) Brown Forest, and (4) Marine, Lake, and River. The Brown Forest soil regions are much less

extensive than the podzols but represent the most fertile agricultural areas. The Marine, Lake, and River soils are found along the water courses of the country. They are very variable in character but include some of the most productive farming dis-

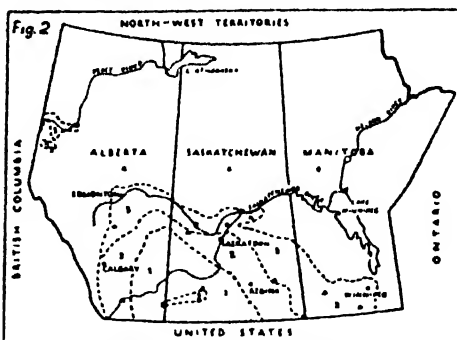


Fig. 2
SOIL ZONES OF THE PRAIRIE PROVINCES OF WESTERN CANADA

1. Brown-soil zone (semi-arid, short-grass prairie).
 2. Dark-brown soil zone (semi-arid to sub-humid prairie).
 3. Black-soil zone (sub-humid "parkland").
 4. Grey-soil zone (sub-humid wooded land).
- Indicates Dominion Experimental Stations

Courtesy: *Empire Journal of Experimental Agriculture*

The climate of eastern Canada varies considerably with respect to both temperature and precipitation. Western Ontario, which extends southward almost to latitude 42°, has the longest frost-free period, and

relatively high summer temperatures. Extremes of 100° F. or over are not uncommon. Precipitation (rain and snow) for this area averages about 30 in. From western Ontario, north and eastward, the precipitation increases progressively and the seasons become much cooler. The average precipitation at Charlottetown in Prince Edward Island is approximately 43 in. and the climate is characterized by a much lower and more even temperature.

In order to understand the agriculture of the prairie provinces in western Canada, it is particularly necessary to appreciate the soil and climatic conditions. These can be discussed to best advantage by reference to the accompanying sketch map of the prairie provinces showing the major soil zones.

Zones 1, 2 and 3 include the farmed areas of the prairie provinces. They extend from the eastern boundary of Manitoba to the foot-hills of the Rocky Mountains in Alberta, and from latitude 49° for a distance northward of about 350 miles. The dotted line between Zones 3 and 4, until recently marked the northern



EASTERN CANADA

extensive than the podzols but represent the most fertile agricultural areas. The Marine, Lake, and River soils are found along the water courses of the country. They are very variable in character but include some of the most productive farming dis-

boundary of settlement, but now a considerable area in Zone 4, has been "homesteaded."

The northern and eastern limits of Zone 2 coincide approximately with the transition from treeless prairie to partially wooded prairie or "parkland" in Zone 3. A corresponding change may be observed from soils which are brown in colour to those that are predominantly black. Both types are naturally very fertile and plentifully supplied with lime. The soil texture varies from areas of heavy clay loam to loam, and sandy clay loam.

In Zones 1, 2 and 3, available moisture is undoubtedly the limiting factor in crop production. Crop failures due to drought frequently occur in Zone 1, and to a lesser extent in Zone 2. In Zone 3, moisture conditions are much more favourable, due partly to a higher precipitation and also to increased moisture efficiency, associated with a lower mean temperature and a reduction in the duration and velocity of drying winds. While there is consider-

able difference between zones in annual precipitation, the seasonal variation is by far the most important, since the latter is usually the determining factor between crop failures and abundant yields.

British Columbia, the most westerly province of the Dominion, is characterized by natural features which are very different from those found in any other part of Canada. Parallel mountain ranges of great height cover almost the entire province.

Although mountains thus constitute the predominant features, they are interspaced with valleys, many of which are extremely fertile. The climate of the northern interior of the province is continental in character, being cold in winter and hot in summer. Moisture conditions vary greatly. To the

leeward of the mountains it is dry, resulting in semi-arid to arid conditions, but on the westerly sides of the mountain ranges there is an abundant rainfall, making it possible in some of the larger valleys to install systems of irrigation for the production of fruit, vegetables, and forage crops.

The climate of the western coast of British Columbia is humid and equable, somewhat similar to that of western Europe. Warm, moisture-laden westerly winds from the Pacific Ocean exercise a moderating influence which is conducive to a luxuriant vegetation. The climate is well adapted therefore to the production of fruits, horticultural plants of great variety, vegetables, and

herbage plants for hay and pasture.

Agricultural Lands and Land Tenure.

Canada has an area of about 350,000,000 acres of land suitable for farming purposes. Of this total, over 163,000,000 acres are in occupied farms, of which approximately 86,000,000 acres are improved land. The census figures of 1931 show the areas of occupied agricultural land by provinces. These are given in the following tabulation, together with percentage figures showing



FARMING IN CANADA

Above: A six-horse "outfit"—a common power unit in western Canada. Below: Tractor drawing spring-tooth harrows.

Photos: Dominion Experimental Farm; Canadian Pacific Railway

how much land is now occupied in relation to the estimated areas which are potentially capable of utilization for agricultural purposes.

TABLE 2

AREA OF OCCUPIED AND ESTIMATED POTENTIAL AGRICULTURAL LANDS IN THE NINE PROVINCES AND IN ALL CANADA.¹

Province	Agricultural Land	
	Acres Occupied	Percentage of Potential
Prince Edward Island	1,191,000	95
Nova Scotia	4,302,000	53
New Brunswick	4,152,000	39
Quebec	17,304,000	40
Ontario	22,841,000	35
Manitoba	15,132,000	47
Saskatchewan	55,673,000	69
Alberta	38,977,000	44
British Columbia	3,542,000	16
Total for Canada	163,114,000	46

In Canada the great majority of farmers own their property. Tenancy and part tenancy is slightly on the increase, but in June, 1931, 586,299 farms, or 80.4 per cent of the 728,664 farms in Canada, were owned by their operators. Another 67,942 farmers, or 9.3 per cent, were part owners and part operators. The percentage distribution of farms by tenure is given in the following table—

TABLE 3

PER CENT DISTRIBUTION OF FARMS BY TENURE, 1931¹

	Owners	Part Owners Part Tenants	Tenants
Prince Edward Is.	94.0	4.2	1.8
Nova Scotia	94.2	3.1	2.7
New Brunswick	93.9	3.4	2.7
Quebec	93.1	3.2	3.7
Ontario	81.9	6.9	11.2
Manitoba	70.1	11.7	18.2
Saskatchewan	66.5	18.1	15.4
Alberta	73.0	14.9	12.1
British Columbia	82.0	7.1	10.9

Types of Farming. The main types of agriculture carried on in Canada may be classified as follows—

Mixed Farming. A combination of live stock and field crops, with special emphasis on dairying, is the dominant system of farming throughout eastern Canada. In the five eastern provinces, hay and pasture occupy approximately 65 per cent of the crop acreage, the remaining 35 per cent being devoted to cereal grains, maize for silage,

field roots, and potatoes. Maize is cultivated chiefly in Ontario, while field roots are important in Quebec and the Maritime provinces. The sequence of crops commonly followed consists of cereal grains seeded down to a timothy-clover mixture. A grain crop is harvested in the year of seeding, and this is followed by two or three crops of hay. Grazing is provided by "natural pastures" occupying the less arable portion of the land and by the aftermath from the hay crop, together with such annual supplementary crops as may be required. The rotation is completed by ploughing the sod and seeding intertilled crops, usually maize or field roots.

Of the cereal crops grown in eastern Canada, oats is by far the most important,



A cross between domestic cattle and the buffalo which has not proved quite so hardy as had been hoped.

occupying somewhat the same relative position as wheat does in the West. The potato crop is important, especially in Prince Edward Island, Nova Scotia, and New Brunswick, where it rivals the oat crop in value. In western Ontario, alfalfa (lucerne) is cultivated quite extensively, usually in pure culture. It is grown also in a mixture with timothy and clover, a practice which is rapidly increasing.

In many parts of the prairie provinces grain growing is being supplemented by the raising of live stock and poultry, and by dairying. This is especially the case in Manitoba and in the "parkbelt" area (Zones 3 and 4) in Saskatchewan and Alberta.

Cultivated grasses and legumes for hay and pasture in the prairie provinces are relatively unimportant as compared with the total of 40,000,000 acres of cropped land. Only about 5 per cent of the latter is devoted to perennial crops. Taken by itself,

¹ From *Canada Year Book*, 1934-35.

² Dominion Bureau of Statistics.



DAIRY CATTLE

On Belvoir Farm, Delaware, Ontario.

Photo: Canadian Official News Bureau

however, this figure is misleading with respect to the acreage devoted to forage production; in that it does not include cereal crops that are pastured or harvested in the sheaf for hay. Oats, more than all other forage crops combined, are grown for fodder. Natural grasslands provide most of the pasturage, of which there are some 29,000,000 acres. About 12,000,000 acres of natural pasture land are used for ranching, mostly in Zone 1.

The main herbage plants that are sufficiently winter-hardy and drought-resistant for the climatic conditions of western Canada are the three perennial grasses (brome grass, *Bromus inermis*; slender wheat grass, *Agropyron tenerum*; and crested wheat grass, *Agropyron cristatum*) and two legumes (alfalfa, *Medicago*; sweet clover, *Melilotus*). In general, crested wheat grass is particularly adapted to the drier sections represented by Zones 1 and 2, while brome grass, slender wheat grass, and alfalfa are best adapted to Zones 2 and 3. Sweet clover is cultivated in all parts of the West, but most extensively in Manitoba. Alfalfa is by far the most satisfactory crop for hay in the irrigated areas of southern Alberta.

In British Columbia, apart from the important fruit and vegetable growing industries, mixed farming is almost the sole agricultural occupation. This type of farming is practised in many of the interior valleys, the Fraser River valley and on Vancouver Island. Dairy products form the largest items of production.

Grain Farming. As mixed farming is the prevailing type of agriculture in eastern Canada, so grain farming is the dominant system in the prairie provinces. The latter

differs from the former in that all, or the greater part, of the farm revenue is derived from the sale of grain. In Saskatchewan, and Alberta in particular, the wheat crop occupies a place of paramount importance. The graph shows the trend of wheat acreages in Canada and in the main wheat-growing provinces, 1900-1933.

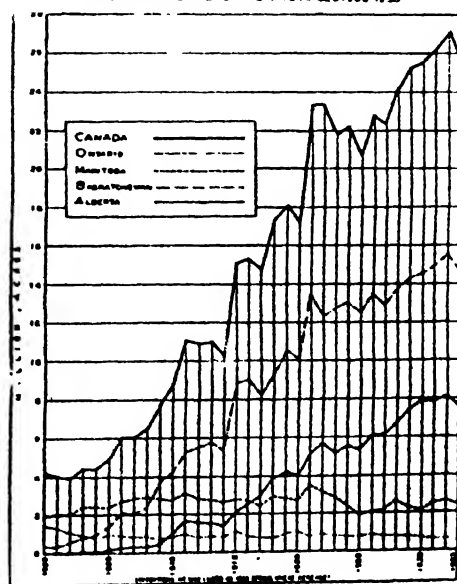
Crop production in the West is extensive rather than intensive. The farms are relatively large and heavily mechanized. In Saskatchewan, which produces about one-half of the wheat grown in the West, the average size of a farm is over 400 acres. The wide expanses of fertile and easily tilled land make for cheapness of wheat production, and the climatic conditions ensure a crop of exceptionally

high milling quality. It is these factors which have made Canada one of the foremost wheat-exporting countries of the world.

In themselves, however, these natural advantages are not sufficient to account for the important position of wheat in Canadian agriculture. Transport and handling equipment, milling facilities, new types of machinery, special cultural methods, and adapted varieties, had to be developed to meet the situation adequately. The transport problem is taken care of by a network of railways which

Fig 3

THE TREND OF WHEAT ACREAGES IN CANADA
AND
IN THE MAIN WHEAT-GROWING PROVINCES 1900-1933





WHEAT, ONE OF THE STAPLE PRODUCTS OF CANADA

feed two transcontinental lines, and which in turn transport the grain to the head of the Great Lakes and to the Pacific Ocean. Handling equipment is provided by 5737 elevators, of which there are from one to eight or ten in each village and town, and by Government storage elevators with a total capacity of 172,000,000 bushels. The total daily capacity of flour mills is approximately 105,000 barrels. Farm machinery units have been adapted and enlarged for six-, eight-, and even twelve-horse teams, and for tractor operation. And finally, the plant

breeders have developed highly productive and early maturing varieties of wheat of high milling quality, the most famous of which is the Marquis variety developed by Sir Charles Saunders, formerly Dominion Cerealists. Earlier maturing varieties than Marquis, especially Garnet and Reward, are now extensively grown and have pushed the wheat belt much farther north. New rust-resistant varieties of wheat, recently developed, are destined to be widely grown, especially in Manitoba and south-eastern Saskatchewan, where the black stem-rust disease of wheat frequently causes heavy damage.

As previously indicated, available soil moisture is the limiting factor in crop production over most of the area devoted to hard red spring wheat. The average annual precipitation in Zone 1 (see above sketch-map of the prairie provinces) varies from 11 in. to 14 in. In Zone 2 the precipitation is roughly 15 in. annually. Moisture conditions in Zone 3 are more favourable with a range of 15 in. to 20 in. Considering the limited precipitation and conditions favouring a high rate of evaporation, it will be appreciated that the most efficient dry-farming methods of moisture conservation must be adopted. Chief among these are the short rotation, including the practice of "summer-fallowing," in which the land is left without a crop one year in three and cultivated intermittently during the season to control weeds. The practice of surface tillage with cultivator or disk harrow, as opposed to ploughing, has gained rapidly in recent years, because it is



THRESHING WHEAT IN WESTERN CANADA



PHASES OF AGRICULTURE

Development of Canadian agriculture has been both recent and rapid. Appreciable progress was first made in 1757. In 1811 conquest of the western prairies began. To-day the soil is the most important of the natural resources. 1. Filling a flue-curing tobacco barn. Annual revenue from tobacco in 1935 was over \$10,000,000. 2. Cultivating sunflowers. 3. Milk pasturizers and conveyors on the Canadian Pacific Farm at Strathmore. Dairy products rank next in value to field crops. 4. Fruit farming. This is extensive in Nova Scotia, Ontario, and British Columbia. 5. Turkey stock in British Columbia. 6. Gathering hemp.

Photos: Canadian Official News Bureau; Canadian National Railways; Canadian Pacific Railway

more economical of soil moisture and assists in the control of soil drifting. The latter was very troublesome in certain areas during two or three dry years preceding 1935.

Ranching. The ranching industry is car-

ried on in southern Alberta, south-western Saskatchewan, and in certain districts in the interior of British Columbia. These areas are unsuited as arable farming land because of scanty precipitation, unfavourable soil

conditions, or rough topography. The amount of land devoted to ranching is estimated roughly at 20,000,000 acres.

Special Crops. In certain sections of Canada the climate and soil are well adapted to fruit growing. The Annapolis Valley of Nova Scotia, the Niagara peninsula of Ontario, and the Okanagan district of British Columbia are world famous centres of fruit production. Apples make up well over half the value of the commercial fruit production. Various types of tobacco are grown in Ontario and Quebec and small amounts in British Columbia. There are sugar beet areas in southern Alberta and western Ontario, approximately one-fourth of the Canadian yield of refined sugar being produced in Alberta and three-fourths in Ontario.

Government in Relation to Agriculture. There are many avenues through which the Dominion and Provincial governments assist and foster the farming industry. The relation of government to agriculture may be considered under three main headings: administration and extension, educational facilities, experimentation and research.

Administration and Extension. The Dominion Government operates through its organization of nine branches, as follows: Health of Animals, Experimental Farms, Dairy and Cold Storage, Live-stock, Seed, Entomological, Fruit, Economics, and Publicity and Extension. These branches administer the various Acts of Parliament affecting agriculture, and put into operation

the policies of the Government for the improvement of agriculture throughout the Dominion. The nine provinces of Canada, also, have their own Departments of Agriculture, which are actively engaged in assisting agriculture by educational and extension work. Each province, except Prince Edward Island, maintains a District Representative Service through which the Department of Agriculture carries on its educational and extension activities.

Educational Facilities. Agricultural colleges maintained by the provinces are the Nova Scotia Agricultural College at Truro, the Ontario Agricultural College and Ontario Veterinary College at Guelph, and the Manitoba Agricultural College at Winnipeg. Three agricultural colleges in Quebec are assisted by the provincial government. Agricultural colleges are maintained also by Saskatchewan, Alberta and British Columbia in connection with the provincial universities at Saskatoon, Edmonton, and Vancouver respectively. In addition, certain provincial Schools of Agriculture are found in Alberta and Ontario, and several of the provinces provide financial assistance to secondary schools for the teaching of agricultural subjects.

Experimentation and Research. The Experimental Farms Branch of the Dominion Department of Agriculture consists of the Central Experimental Farm at Ottawa, twenty-four branch farms and stations, eight substations, and a number of other stations. This branch is engaged in studying



RANCH IN THE FOOTHILLS OF THE ROCKY MOUNTAINS

Photo: Canadian Official News Bureau

basic agricultural problems. Assistance and advice on every phase of productive agriculture are given to the farmers of the Dominion.

At the Central Farm, Ottawa, the headquarters of the system, are the offices of the Director and his thirteen Divisional Chiefs.

The Division of Biology and Agriculture of the National Research Council, at Ottawa, is well equipped with laboratory facilities to undertake fundamental research in agriculture. The Research Council and the Experimental Farms Branch co-operate closely in attacking the more difficult research problems affecting agriculture.

Co-operation between the various institutions engaged in research is effected through committees set up from time to time by the National Advisory Committee on Agricultural Services.

Co-operative Organizations. Many of the largest agricultural enterprises in Canada are conducted by co-operative organizations. Some of these, such as the wheat pool and co-operatives handling live stock and fruit, have reached a high stage of development, and have received world-wide recognition, while hundreds of smaller organizations are doing effective service in the marketing of farm products and in the purchasing of farm supplies. In 1934-1935, farmers' co-operative associations actively engaged in business numbered 697, with 341,020 shareholders and members financially interested. Combined assets were \$104,350,702 and the total business turnover \$136,411,483.

Grain and seed co-operatives, including the wheat pools of western Canada, comprise 30 associations with a membership totalling 170,081, and an estimated turnover of \$94,912,237, thus exceeding all other commodity groups in volume of business. Dairy co-operatives include 115 associations; live stock, 53; fruit and vegetables, 104; purchasing organizations, 333. The wool growers, honey producers, maple sugar producers, tobacco growers, and poultrymen, all have their co-operative marketing associations.

ALBANEL, CHARLES (1616-1696). Missionary and explorer. He was born in France, joined the Jesuit Order and entered Canada in 1649. He carried out many important explorations and was probably the first white man to make an overland journey from the St. Lawrence to Hudson Bay, in 1670-1671.

ALBANY RIVER. Rises in western Ontario, north-west of Lake Superior, and flows into James Bay, after a course of 610 miles. It was named after the Duke of Albany, afterward James II. Fort Albany

of the Hudson's Bay Company stands at the river's mouth.

ALBERTA. See article, Vol. I.

ALLAN LINE. A Canadian line of steamships, founded by Sir Hugh Allan. The first vessel, the *Canadian*, an iron-screw steamship, made its first voyage across the Atlantic in 1855. The following year a regular service was opened between Canada and England with a fleet of four vessels. In 1859 the fleet was increased to eight steamers, and a weekly service inaugurated. The Allan Line afterward developed into an organization that held an important place in transatlantic transportation, until it was absorbed by the Canadian Pacific Ocean Services.

ALLOUEZ, CLAUDE JEAN (1622-1689). Jesuit missionary, born in France. He was sent to Quebec in 1657 and in 1665 founded a mission at Chequamegon Bay on Lake Superior, and four years later another on Fox River. Most of his life was spent in the Illinois country.

AMHERST, JEFFREY, BARON. See article, Vol. I.

ANIMAL LIFE. Practically all the animals of Canada are rather closely related to similar animals found in Northern Europe and Northern Asia, but quite different from the animals of South America, Africa, Southern Asia, and Australia. This similarity is more striking northward, such animals as the polar bear, caribou, arctic hare, and lemming being circumpolar in occurrence. Southward the similarity is not so striking, but mention of the following, found also in the Old World, indicates the relationship: the bear, wolf, fox, lynx, marten, deer, bison, beaver, squirrel, marmot, vole, hare, and many others. Many of these are not identical in the two regions, but one who knows the animals of Canada will have no difficulty in recognizing many animals of the Old World as their close relatives.

Changes brought about through agriculture, lumbering, and other activities involved in the development of Canada have caused reductions in the numbers of many of the larger mammals, some birds, and the game and commercial fish, but there is still much of the country, especially northward and in the mountains, where natural conditions have not yet been greatly altered.

Mammals. The American bison, popularly called buffalo (see **BUFFALO**), is one of the most magnificent of North American mammals. Millions of these splendid animals formerly roamed the prairies of Western Canada and southward in the United States to Mexico. With the opening up of the West by railways, these animals were hunted until by 1889 only a few hundred plains buffalo



DEER IN BUFFALO NATIONAL PARK

The Wapiti, to which the name Elk has unfortunately become attached, is Canada's finest looking deer.

Photo: Canadian Official News Bureau

were running wild and unprotected. Under protection in the extensive National Parks, the Canadian Government now has several thousand plains buffalo. In addition, a special reserve for the wood buffalo, a larger and darker race found in wooded areas north of the prairies, has been set aside west of the Slave River in the Northwest Territories.

The musk ox (which see) formerly occurred in considerable numbers on the Arctic Archipelago and over the tundra country on the mainland farther south. It too has been reduced to very small numbers through excessive hunting, but the Government is now giving the species protection.

Several varieties of mountain sheep or bighorns (see BIGHORN) are found in the western mountains of North America. They are particularly abundant in the western National Parks of Canada. They vary considerably in different parts of the range, notably in colour. The sheep in Banff National Park and surrounding areas are brownish to greyish brown. In the Yukon and Alaska, they are almost white. A black form, Stone's sheep, is found in northern British Columbia. Sheep intermediate in coloration between these extremes occur in some areas.

The so-called Rocky Mountain goat is more closely related to the European chamois than it is to the true goat.

Another animal with no near relatives which has received a misleading name is the pronghorn, erroneously called antelope. It is only distantly related to the true antelopes of Africa and India. The pronghorn is the swiftest of the larger animals of Canada and one of the most graceful. It formerly occurred in immense herds on the western plains, but, as in the case of the bison, it was persecuted so relentlessly that it was once feared that its extinction was inevitable. Recently, it has increased in numbers but its continued existence is not yet assured. See PRONGHORN.

Canada is the home of some of the finest species of deer to be found anywhere. The caribou herds of the far north once rivalled those of the buffalo, but they, too, have been sadly reduced in numbers. Several species are recognized, including woodland caribou in the southern forested part of the range; barren-ground caribou of the tundra region; mountain caribou of large size and dark coloration; and Newfoundland caribou.

The lordly moose (which see) is still found from New Brunswick to British Columbia in the northern forested sections of the various provinces. It is a close relative of the European elk of Norway and Sweden, but the Canadian moose is the larger animal. In fact, the moose is the largest deer found anywhere in the world. The wapiti (which see), to which the name elk has unfortunately become attached, is Canada's finest looking deer, possessing a graceful bearing and a beautiful set of antlers. It once occurred in some numbers in southern Ontario and more abundantly in the West. It is now rare in a wild state except in the mountains, but considerable numbers are to be found in reserves in the West.

The white-tailed deer is the commonest big game animal of Eastern Canada, where it is occupying new areas northward with the retreat of the moose. The species extends westward to the Cascade Mountains. The mule deer formerly occurred abundantly on the plains of Western Canada from Manitoba to the interior of British Columbia. The Columbia black-tailed deer or coast deer is found in the coastal region of British Columbia.

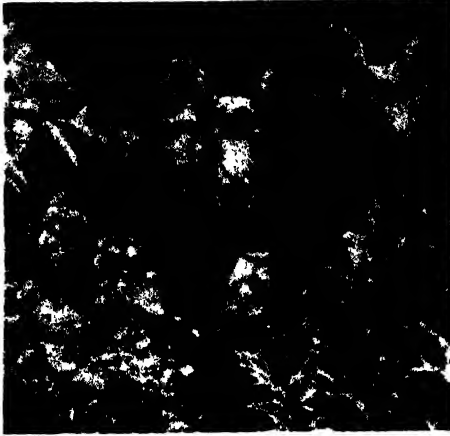
A variety of bears occur (see BEAR). The best known is the black bear, which is found throughout the whole of the wooded region of Canada. In the West, particularly in the British Columbia coastal area, occur a variety of forms related to the black bear, but differing in size and coloration. One of the most striking is a white species known as Kermode's bear. In the Rocky Mountain



ANIMAL LIFE

Most of the animals of Canada are closely related to similar ones in the north of Europe and of Asia. 1. Buffalo. There are several thousand in Buffalo National Park. 2. Deer. 3. Lynx. 4. Bear. 5. Badger. 6. Mink. 7. Musk-oxen. 8. Pronghorn antelope. 9. Moose. The largest of the deer family found in Canada. 10. Brush wolf. 11. Raccoon.

Photos: Canadian Official News Bureau; National Parks of Canada; Canadian National Railways; Canadian Pacific Railway; Bond



TWIN MOOSE CALVES

Photo: Canadian Official News Bureau

region occurs the grizzly bear. In this group also there is great variation in size and coloration in different parts of the range. The polar bear is confined to the arctic regions.

The raccoon (which see) is confined in the East to the southern hardwood forest area and in the West to a narrow belt along the coast.

The weasel, mink, otter, fisher, marten, and striped skunk formerly occurred throughout the forested parts of the country (see separate articles on these animals). The fisher and the marten, both highly prized for their pelts, have become rare except in the more inaccessible districts. The otter has retreated to the less densely settled areas, but the others are still generally distributed. The sea otter, formerly abundant along the British Columbia coast, is now rare. The badger is common on the western prairies and in southern British Columbia, while the wolverine (which see), although widely distributed northward, is nowhere common.

The red fox (see Fox) is the common fox of Canada. It is generally distributed south of the northern limit of trees. The cross, black and silver foxes are merely colour phases of this common species. The arctic fox is a valuable fur resource in the Arctic regions.

The wolves of Canada are of two types; a large form and a smaller dog-like form, usually known as the coyote or brush wolf (see COYOTE). The large wolves are found in the northern forests, in the mountains, and on the arctic tundra. The coyote lives nearer civilization, where he is sometimes destructive to the smaller domestic animals and poultry.

The cougar (see PANTHER; PUMA) or

mountain lion is the largest of the cats found in Canada. It is now practically confined to the mountains of the West. The Canada lynx and the bobcat or bay lynx are the only other members of the cat family found in the Dominion (see LYNX). The former is generally distributed in the northern regions, while the latter is more southern and eastern in its range.

The beaver (which see) is the largest of the rodents or gnawing animals of Canada. It was formerly common throughout the forested areas but has been so assiduously trapped for its fur that it has become greatly reduced. It is, however, capable of recovering its numbers if given reasonable protection. The beaver was formerly of great importance in the fur trade, a beaver skin being at one time a standard of value in the "fur countries." The beaver is one of the national emblems of Canada.

Because of its abundance and powers of reproduction, the musk-rat is one of the most valuable of the fur-bearing animals. It occurs south of the northern limit of trees. Another common large rodent in the forested area is the porcupine. See MUSK-RAT, PORCUPINE.

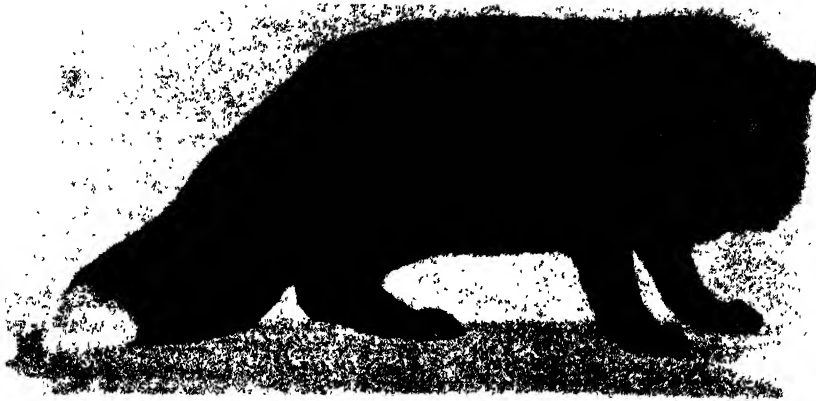
The red squirrel, chipmunk, flying squirrel, marmot, white-footed, or deer mouse, meadow mouse or vole, and jumping mouse are widely distributed and generally abundant (see MARMOT; MOUSE; SQUIRREL). West of the Great Lakes occur several species of ground squirrels, popularly called gophers, one species ranging in the arctic tundra from Hudson Bay north-westward. True gophers are confined to the extreme southern parts of the Prairie Provinces and British Columbia.



BEAVER

The largest of Canada's rodents.

Official News



SILVER FOX

Photo: Canadian Official News Bureau

Lemmings (which see) of several species occur in the arctic regions. They undergo marked fluctuations in numbers and these fluctuations in turn affect the abundance of animals which feed on lemmings such as the arctic fox and snowy owl. The introduced brown rat and the house mouse are widely distributed in settled districts.

No true rabbits are native to Canada, although the cotton-tails of southern Ontario and southern parts of the Prairie Provinces are intermediate in some respects between rabbits and hares. The most generally distributed hare is the so-called snow-shoe rabbit or varying hare which occupies the northern wooded region across the country. Other species of hares include the arctic hare and the erroneously named jack rabbits of the prairies. The introduced European hare has recently become common in southern Ontario.

A few species of moles, shrews, and bats complete the list of terrestrial mammals except for the Virginia opossum, which has occasionally been taken in the extreme southern part of Ontario.

A variety of aquatic mammals is found around the Atlantic, Pacific, and Arctic coasts. In the arctic regions the commonest seals are the ringed seal and the bearded seal; the walrus also occurs in considerable numbers. There is a large seal fishery about Newfoundland which is supported mainly by the hooded seal and the harp or Greenland seal. On the Pacific, the northern fur seal and Steller's sea lion are the most notable. The harbour seal occurs on all coasts, Pacific, Arctic, and Atlantic. See SEAL; WALRUS.

A whaling industry formerly existed on Vancouver Island, supported largely by the bowhead, sperm, sulphur-bottom, and hump-

back whales. Smaller cetaceans found in Canadian waters include the killer whale, white whale or beluga, dolphin, grampus, blackfish, porpoise, and narwhal. See DOLPHIN; GRAMPUS; NARWHAL; PORPOISE; WHALE.

Birds. As with mammals, many of the birds of Canada are closely related to birds of the Old World. This is particularly true among the sea fowl. Formerly myriads of water fowl of many species nested around the numerous small lakes in the prairie region. Although numbers have been reduced through the spread of agriculture and excessive shooting, most species still occur in large numbers. These Western nesting ducks include the mallard, canvasback, redhead, pintail, and bluebills (scaup ducks). East of Manitoba, one of the commonest species is the black duck, while the golden-eye nests all across the country. See DUCK; also separate articles on main species.

Several species of geese, including the Canada goose, snow goose or wavey, blue goose, and brant, nest in the arctic and are found southward at suitable seasons on their migratory movements to and from their breeding grounds. The beautiful whistling swan also occurs in migration to its nesting grounds on the Arctic coast and islands north-west of Hudson Bay. See GOOSE; SWAN.

The gallinaceous birds of Canada include the ruffed grouse and spruce grouse or fool hen of wide distribution, the blue grouse of the Rocky Mountain and Pacific coast region, the willow and rock ptarmigan of the arctic, the prairie chicken and sharp-tailed grouse of the central regions, and the so-called quail or bobwhite of southern Ontario. The wild turkey which formerly occurred in southern Ontario is now extinct there. The

European grey partridge and the ring-necked pheasant have been introduced. See GROUSE; PARTRIDGE; PHEASANT; PTARMIGAN.

In Eastern Canada there formerly occurred in vast numbers the passenger pigeon, now extinct. Its numbers are said to have been so great that flocks during migration "darkened the sun." Living relatives include the bandtailed-pigeon of British Columbia and the mourning dove which occurs across Canada. See DOVE; PIGEON.

The raptorial birds worthy of mention are the bald and golden eagles, osprey, goshawk, and about a dozen other species of hawk (see EAGLE; GOSHAWK; OSPREY). Vultures (which see) are seen only along the



WILD CANADA GOOSE

The bird is covering its eggs prior to leaving the nest.

Photo: National Parks of Canada

southern borders of Canada, while two species of gerfalcon occur in the arctic. There are also more than a dozen species of owl (which see), including the great-horned, long-eared, short-eared, barred, screech, barn, and snowy.

The raven (which see) is confined to the far north; the crow (which see) has greatly increased with the clearing of the land and the spread of agriculture.

Song and insectivorous birds are plentiful and are given splendid protection throughout North America as a result of a treaty arranged for that purpose between Canada and the United States. Most of these birds are migratory, spending only the nesting season in Canada and migrating southward for the winter.

The thrush family (see THRUSH) is represented by several species, including the American robin and bluebird, besides the typical thrushes. The wood warblers, a family of small, bright-coloured insectivorous birds peculiar to the Americas, is represented in Canada during the nesting season by more than thirty species.

Another equally large family is that of the sparrows and finches (see SPARROW; FINCH).

The cuckoos (which see) of Canada do not have the habit of laying their eggs in the nests of other birds as does the English cuckoo. That habit here belongs to the cowbird. The humming-birds (which see) are represented by a single species, the ruby-throated, in eastern Canada, and three species in the far west.

Other families of the smaller birds include wrens, vireos, swallows, jays, flycatchers, and woodpeckers. A large variety of shore-birds includes the phalaropes, sandpipers, curlews, and plovers.

The loon is a characteristic bird of Canada, found on practically all of the inland lakes, especially northward. The great blue heron is a picturesque species commonly seen feeding in marshes and along the shallow edges of lakes. It colonizes for nestings, a large number of nests being commonly placed in one tree or in a group of trees.

Sea fowl are abundant on the Atlantic and Pacific coasts. Sanctuaries have been established for many of the species of sea fowl in a series of islands in the Gulf of St. Lawrence. These islands are the breeding grounds for gannets, kittiwakes, guillemots, murre, razorbills, puffins, gulls, petrels, cormorants, and others. Bird Rock off the Magdalen Islands and Bonaventure Island constitute the chief breeding places in the Western Hemisphere of the gannet.

In addition to the game birds already mentioned, the house sparrow and starling have been introduced. The Japanese starling is well established at Vancouver. There are separate articles on practically all the birds here mentioned.

Reptiles and Amphibians. Canada has little reptile and amphibian life. About twenty-five species of snakes are known to occur, but most of them are confined to southern Ontario and southern British Columbia. Northward the number of species rapidly diminishes. Garter snakes are the only snakes of wide distribution. They occur sparingly in the West to 60° north latitude. The largest snake found in southern Ontario is the fox snake, which has been known to reach a length of 6 ft. Other snakes found in this region are the hog-nosed snake, water snake, and milk snake. The only poisonous species are the massasauga, in parts of Ontario and the rattlesnake (which see) in southern Alberta and southern British Columbia. See SNAKE; VIPER.

Eight or nine kinds of turtles are known but few occur outside of southern Ontario. The painted turtle is the only one of wide distribution and even it does not occur very far north. Some of the common species in Ontario are the snapping turtle, Blanding's turtle, and the map turtle. See TURTLE.

Only two species of lizard occur: one in Ontario, and one in British Columbia.

The amphibians include about a dozen species of toad, frog, and tree frog of which the largest is the bullfrog. The few kinds of salamanders include the mud puppy and several species of *Ambystoma*. The tiger salamander is common in the southern parts of the Prairie Provinces. See FROG; SALAMANDER; TOAD.

Fish and Fisheries. Canada possesses rich commercial fisheries, as well as some of the finest game fish in the world. (There are separate articles on most species here mentioned.) The Atlantic salmon occurs along the whole Atlantic coast, running for spawning into many of the rivers of Nova Scotia, New Brunswick, Quebec, Labrador, and Newfoundland. It supports a considerable commercial fishery as well as providing unexcelled angling on many rivers. It originally occurred in the St. Lawrence River system to the head of Lake Ontario, but it is not now found west of the Saguenay. A famous landlocked variety or permanent freshwater salmon, known as ouananiche, occurs in Lake St. John. Another landlocked form, the Sebago salmon, is found in some of the lakes of New Brunswick. The chief commercial species of the Atlantic coast are the cod, herring, haddock, mackerel, and the smelt. The swordfish is taken both as a game and commercial species.

Five species of Pacific salmon are found in the waters of British Columbia. Of these, the most valuable for canning are the sockeye and coho. The largest species, known as king, spring, and tyeo or Chinook is usually sold fresh or frozen. This is also an outstanding game species.

The more valuable commercial fishes of British Columbia apart from the salmon are halibut, herring, pilchard, and ling cod. The pilchard is chiefly used in making fish meal and oil.

Canada has large areas of fresh water, most of which contain food and game fish of excellent quality. The whitefish is the most valuable of the fresh-water commercial fishes. Other fresh-water species of commercial importance are lake trout, lake herring (also called tullibee and cisco), pike perch, and sturgeon.

The game species found in the fresh waters of Canada are the steelhead, rainbow and cut-throat trout of British Columbia, and the speckled trout (really a char), black bass and maskinonge of eastern Canada. A number of species, including the Great Lakes trout, pike and pike perch which are fished commercially in the larger bodies of water, provide considerable sport in the smaller lakes, especially where the more

sporting species are rare or absent. These three are found everywhere in eastern Canada, and north of the prairies westward.

The lobster fisheries of the Atlantic coast of Canada are worth about £1,000,000 annually. Canada probably produces more lobsters than all the rest of the world combined. Shrimps and crabs are also fished, especially on the Pacific coast. Large quantities of oysters are produced around Prince Edward Island. The native oyster of British Columbia is not large enough to command a ready market and attempts are being made to introduce the Japanese oyster and also the eastern oyster. Clams, mussels, cockles, scallops, and winkles all occur in Canadian waters.

ANTICOSTI ISLAND. See article, Vol. I.

ARCHAEOLOGY. Canada, with its fifty or more Indian tribes, that speak ten or eleven hitherto unrelated languages, has been a hunting ground for ethnographers rather than for archaeologists throughout the four centuries that have elapsed since its discovery. (See INDIANS, AMERICAN.) This was not altogether unnatural, because nowhere on the landscape are the remains of the prehistoric Indians at all noticeable. In the eastern and the northern parts of Canada and on the plains their flimsy dwellings of bark or skin, constantly dismantled, left practically no perceptible traces; and even the enormous houses of cedar that once fringed the Pacific coast rotted away and became buried beneath a dense growth of forest. Nevertheless, the last half century, and especially the last twenty years, have cast faint gleams of light on the pre-European era, and revealed on its murky stage the dim figures of numerous tribes roaming hither and yon, struggling and contending with one another for the right to survive.

Eastern Canada. In eastern Canada archaeologists have learned that the Iroquoian peoples, whom Cartier found entrenched along the St. Lawrence in 1535, and whom Champlain visited in south-eastern Ontario a century later, were themselves but recent immigrants who had entered Canada from the Ohio basin only three or four centuries before; that they brought in with them the practice of agriculture, not known to their Algonkian predecessors or indeed to any other tribe within the Dominion; and that even in pre-European times they possessed a genius for political organization, destined later to influence, and in large measure to determine, the course of European history on the North American continent. Actually they were the advance guard of that nascent civilization which, expanding from its birthplace in Central

America, established itself in the south of the United States about the beginning of the Christian era and steadily worked its way northward. It seems to have sent a feeble ripple into Canada even before the wave of Iroquoian tribes, because certain mounds and graves in south-eastern Ontario indicate the intrusion there of some mound-building people akin to those who lived in Ohio and other states of the Mississippi basin. Preceding these mound-builders, apparently, were a pre-ceramic Algonkian-speaking people whose outlines are very obscure. Archaeologists have not discovered any definite evidence of their presence in south-eastern Ontario, even though the Algonkian tribes to the north and north-east lacked pottery right down to European times; but they know of at least one pre-ceramic site on the north shore of the St. Lawrence River near Montreal, and of others in the Maritime Provinces. Beyond this pre-ceramic Algonkian occupation the history of eastern Canada is swallowed up in darkness.

Returning to the Iroquoians, there is some evidence that they entered Canada by two routes, one column following the north shore of Lake Erie, the other the southern Part of the northern group continued down the St. Lawrence River and established itself along the north shore. Cartier visited their two principal settlements at Stadacona (Quebec) and Hochelaga (Montreal). During the century between Cartier's visit and Chaplain's, however, they retreated to the south of the river, and joined with the southern column to form the League of the Five Nations, the celebrated confederacy that firmly resisted the southward expansion of the French colonists and probably prevented their domination of the entire continent.

The Plains and Mackenzie River Area. Traces of a mound-building people appear in southern Manitoba, indicating there also either an immigration from the south, or contact with the tribes of the upper Missis-

sippi. The numerous stone cairns, boulder mosaics, stone mauls, arrowheads, stone pipes, fragments of pottery, and other objects that have been discovered on the plains reveal little more than can be gleaned from the narratives of the first explorers, and carry the story back no farther than a century or two before the arrival of the white man. From the vast basin of the Mackenzie River and its tributaries almost nothing has been recovered; and the rather scanty archaeological finds in the interior of British Columbia have merely elucidated

obscure features in the cultures of its historic inhabitants.

British Columbia. Rather more success has attended efforts along the coast of British Columbia, which is dotted with innumerable shell heaps or kitchen middens, some of them extending nearly a mile along the shore. No archaeologist has ever possessed sufficient funds to excavate completely even a moderately-sized shell heap;

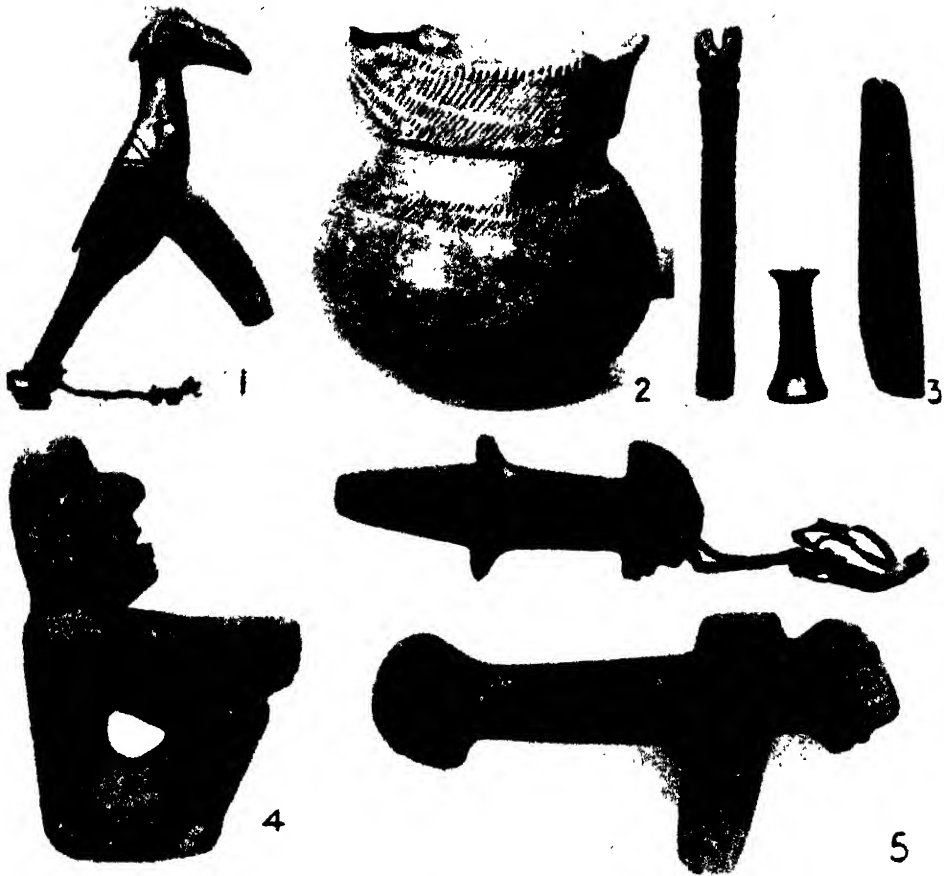
but by running trenches into some, and searching the sea-eroded banks of others, there has been brought into view certain differences between the prehistoric culture along the northern part of the coast and that in southern Vancouver Island and on the opposite mainland. If these differences are correlated with differences between the historic tribes, it seems justifiable to assume that rather more than 1000 years ago one, or, more probably perhaps, two waves of Salish-speaking people from the interior of the province poured down the Fraser River to its mouth and sent a contingent northward to Bella Coola. One puzzling feature in the southern shell heaps is the frequency there of narrow-headed skulls although the present-day Indians are markedly round-headed. Archaeologists suspect that it was only the narrow-headed people who covered their dead beneath stone cairns, a method of burial that has long since passed out of memory. Yet both types appear in the same shell heaps, and at approximately the same not very deep level below the surface.



PREHISTORIC RUINS

Ruins of a prehistoric Eskimo store house in the south of Baffin Island. Passage way and floor are filled with melting snow

Photo: Dewey Soper



ARCHAEOLOGY

1. Stone axe-club from Vancouver with a wooden handle in the form of a bird. 2. An early Indian clay pot from Eardley near Ottawa. Though discovered in territory occupied by Algonkian Indians, its shape and decoration attest its manufacture by Iroquois. 3. Stone club (?), pestle and adze blade from the north-west coast now in the Captain Cook Collection. 4. Steatite figure forming a lamp (?) from Cowichan Bay, Vancouver Island. 5. Stone clubs for killing slaves, from Nootka Sound, British Columbia (From Vancouver's Voyage, 1791).

Photos: British Museum, Harlan I. Smith

so that they must have existed side by side only a few centuries ago. Quite possibly, therefore, the narrow-heads represent not an earlier stratum, as some have thought, but an immigrant (Salish-speaking?) people who were gradually absorbed by the local population. What relationship they bore, if any, to the narrow-headed tribes that inhabited, and still inhabit, Eastern Canada is a problem awaiting investigation.

The size of many British Columbia shell heaps naturally challenges a consideration of their antiquity. How long must it have taken a group of Indians that varied in its population from generation to generation and that occupied a site probably not more than six months in the year to accumulate a

rubbish heap 9 ft. or 10 ft. deep, from 15 ft to 30 ft. wide, and nearly three-quarters of a mile long? Archaeologists can furnish no answer. Cedar trees that have grown to maturity above them and decayed show that some of the sites have been deserted more than 400 years; presumably, therefore, the larger heaps saw their beginnings before A.D. 1000. Yet even in these the bottom layers seem to reveal very much the same culture as the upper, so that the area was comparatively stagnant for a thousand years before it awoke to life with the coming of the white man.

Among Eskimo Ruins in the North. It is among Eskimo ruins in the arctic and sub-arctic regions that archaeologists have

achieved their most striking success (see **ESKIMO**). At innumerable places along the coast line from the Mackenzie River delta to northern Newfoundland are ruins of ancient wood or, more usually, stone houses yielding tools, weapons, and household furniture strangely unlike those that were current among the historic Eskimos. They divide, quite clearly, into two cultures, (1) the Thule, stretching from northern Alaska to Hudson Bay and Greenland, and (2) the Dorset, restricted to the eastern region from Newfoundland to Ellesmere Island.

The Thule culture almost certainly originated in the West during the first millennium A.D. and was carried eastward by migrant tribes that reached their ultimate terminal in South Greenland after the colonization of that island by the early Norsemen.

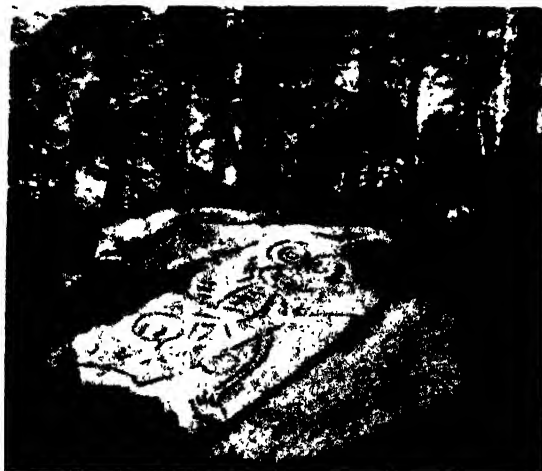
The origin of the Dorset culture is more uncertain. In its general character it is more primitive than the Thule, and its hunting weapons seem less adapted to life on the arctic seaboard. Furthermore, some of its stone implements are foreign to other Eskimo cultures, but common among Indian tribes in Ontario and farther south. It has been suggested, therefore, that the early home of the Dorset Eskimo was the hinterland behind Hudson Bay, that they moved eastward to the sea during the latter half of the first millennium A.D., and gradually spread over the eastern arctic region. A few centuries later the invading Thule Eskimo seem to have swamped them in the northern part of this region, but farther south, in the north of Newfoundland, they lingered on almost down to the discovery of that island by John Cabot in 1497.

In the eastern arctic regions neither the Dorset nor the Thule culture held its ground into historic times, except on isolated Southampton Island, where a late phase of the Thule persisted into the twentieth century.

Both yielded to a new culture developed by a second flood of immigrants from the Barren Grounds behind Hudson Bay, who swept over the whole coast line from Coronation Gulf to the north shore of the Gulf of St. Lawrence and even sent a small party into north-west Greenland. These were the Eskimos discovered by the early navigators. West of Coronation Gulf, however, the Thule culture preserved its main outlines until modern times, though it underwent a few changes through influences partly from

the east, but principally, it would seem, from Alaska.

Although the Thule culture probably arose in northern Alaska, it appears to have been quite distinct from a contemporary or slightly earlier Eskimo culture recently discovered on St. Lawrence Island and elsewhere in the Bering Sea. Characteristic of this Old Bering Sea culture, as it has been called, is a highly-developed curvilinear art for which we



ANCIENT ROCK CARVING

A petroglyph or rock carving near Bella Coola. Similar carvings are common all along the coast of British Columbia, but the historic Indians retain no memory of their origin or significance.

Photo Harlan I. Smith

have found no parentage either in America or in Asia. Its nearest parallel is the art of the Aleutian Islanders, but this must surely be derivative rather than ancestral.

The farther back one delves into the records of the Eskimos, the more complex becomes their history. Although a deep insight has been gained into their movements during the greater part of the Christian era, their racial affiliations, and the origins of their peculiar cultures and of their language, remain as deep a mystery as ever.

Newfoundland. This circuit of Canada comes around finally to Newfoundland, inhabited, at the time of its discovery, by the unfortunate Beothuk Indians who were exterminated early in the nineteenth century. One or two old camp sites on the north shore of the Strait of Belle Isle suggest that two or three families may have escaped to Labrador; if that is so, they probably merged with the friendly Montagnais Indians who roamed over that peninsula. The north



TYPICAL ARCHITECTURE OF FRENCH CANADA

An old Seignury gateway near Montreal.

Photo: Canadian Pacific Railway

of Newfoundland was Eskimo territory in pre-European days, the Beothuk occupying only the centre and south of the island. None of their remains yet discovered throws any light upon their origin, or points to their occupation of the island longer than for a very few hundred years. Certain stone implements, more particularly some stone gouges, suggest the presence of another, perhaps earlier, tribe; but this is far from certain. It is uncertain that the island was inhabited at all before about A.D. 1200.

Archaeology Revealing History. So slowly, because competent workers are few, archaeology is untangling the broad outlines in the history of the Canadian aborigines back to the early centuries of the Christian era. Of their still earlier history during the long centuries and milleniums that preceded that era it has hitherto detected no trace. Most scholars now believe that the forefathers of all the American Indians entered the New World by way of Bering Strait after the close of the Ice Age; that they came, not in one migration, but in several, separated in time by hundreds of years; and that the first immigrants probably travelled down the eastern foothills of the Rockies, because that region lost its covering of ice earlier than other parts of the Dominion. In Colorado and neighbouring states west of the Mississippi River archaeologists have found the bones of extinct animals associated with arrowheads that must have been fashioned by the early wanderers of 10,000 or more years ago; and there is every reason to expect similar remains in Alberta. Yet neither there nor anywhere else in Canada have scientists discovered any traces of man to which they can plausibly assign an antiquity greater than 1500 years. See **ARCHAEOLOGY**; **ETHNOLOGY**.

ARCHITECTURE. Canada is generally regarded as a "new country," although French Canada has a history going back to the beginning of the seventeenth century, one of the oldest schools, and two of the oldest conventual buildings in North America. The Maritime Provinces and Ontario are more modern; their oldest building dates back hardly a century and a half. The Prairie Provinces and British Columbia are not yet old enough to have created a tradition. Their architecture is still derivative; they are the real "new Canada"; their history is still to be lived.

Architecture in Canada then divides itself into the traditional architecture of New France, the late eighteenth century buildings of Eastern Canada up to Confederation, and the modern work all over the Dominion since that event.

Old Architecture in Quebec. The old archi-

ture of the Province of Quebec is based upon the simple building traditions brought out by the settlers from Northern France between 1660 and 1700. These, modified and changed by the conditions of life and of climate, resulted in a traditional French-Canadian architecture of considerable charm. The oldest existing buildings date from the last quarter of the seventeenth century. The Villeneuve house near Charlesbourg and the Farm of the Congregation at Pointe St. Charles, Montreal, are good examples of these earliest houses. They are substantially



OLD PARISH CHURCH
Church of St. Jean, Port-Joli, Quebec, a typical parish church in the province
Photo - McGill University

built with thick walls of field stone, heavy wood beams and high shingled roofs. The later houses developed great curving roofs with deep eaves and galleries to protect the walls from the winter snows. In the district round Montreal a type is found with very massive stone gables resting at the eaves on moulded corbels (which see) and crowned by double chimneys. The Chateau de Ramesay (1705) at Montreal is a good example. Internally the best houses were panelled in white pine with shaped panels of French character, as at No. 92 St. Peter Street, Quebec, built in 1784.

The panelled refectory of the Hôpital Général at Quebec dates from 1674. It retains much of its original furniture and is probably the oldest continually inhabited room in North America. The oldest parts of the Ursuline Monastery, also in Quebec, were built in 1686 and include a fine oak staircase.

Woodcarvings. Wood sculpture and gilding were taught in the school of *arts et métiers* established in 1668 by Mgr. Laval, first

bishop of Quebec, in connection with his Seminary. When this school ceased, about 1730, the tradition of woodcarving was passed on through a line of *Maître-sculpteurs* whose last representatives are still to be found in Quebec. These artists decorated the churches and altars with rich woodcarving and statues in a local version of the French styles of Louis XIV and Louis XV. The names and work of many of them have been handed down. The first was Jacques Leblond de Latour, a French architect who came to Canada toward the end of the seventeenth century and taught in Bishop Laval's school. He and his pupils carved the retables at St. Anne de Beau-pré and L'Ange Gardien of which parts still survive.

The leading sculptors of the eighteenth century were the Sieurs Levasseur. Noël Levasseur (1680-1740), his sons, François Noël (1703-1790) and Jean-Baptiste (1717-1775), designed and executed the carved retable and altars of the

Ursuline church in Quebec (1732), the tabernacle of the Hôpital Général (1721), and numerous decorations and statues in all parts of the province. Pierre Emond is prominent toward the end of the century. His work may be seen in the Briand chapel of the Seminary (1784) and the retable of the Hôpital Général (1770-1780).

At the beginning of the nineteenth century the leading architects of Quebec were François Baillargé (1759-1830) and his son Thomas. Their work is to be seen in the

fine carved altar and retable at St. Joachim (1816), the decorations of Ste Famille on the Island of Orleans (1821), the west front of the Basilica at Quebec, and numerous other buildings in and near the city. Many of Thomas Baillargé's pupils attained to eminence as architects or sculptors, among them André Paquet and L. T. Berlinguet.

The Montreal Sculptors. In the city and district of Montreal, Louis Amable Quevillon (1749-1823) and his associates, Joseph Pepin, René St. James and Paul Rollin decorated many parish churches in woodcarving. Their work is freer, with a more rococo quality, than that of the Quebec sculptors and there was a keen rivalry between the two schools. We know the names of many local sculptors, Fleury David at Sault au-Récollet, Urbain Briand at Pointe-aux-Trembles, Daniel Finsterer at Lacadie, Joseph Turcault at Ste Jeanne, Ile Perrot. The work done in the parish churches by these Canadian craftsmen of



EARLY ARCHITECTURE

Above: The Refectory of the Hôpital Général, Quebec. Built in 1674, it is probably the oldest continually inhabited room in North America. The tables are those made for the original room. *Below:* Chapel of Mgr O. Briand in the Seminary, Quebec, carved by Pierre Emond in 1784.

Photos: McGill University.

the early nineteenth century is remarkable.

The Gothic Revival. In 1824 the old parish church of Notre Dame de Montreal was pulled down and replaced by the present pseudo-Gothic building designed by James O'Donnel, an architect of New York. From this time onward the local style lost ground although churches of traditional type continued to be built as late as 1850.

The Classic Revival. At about the same time numerous public buildings were being erected throughout Canada in a full-dress

Classic style with columned porticoes and pediments. Of this type are the Anglican Cathedral at Quebec (1804); the Customs House, Quebec (1833); the old Customs House, Montreal (1836); and the old Arts Building of McGill University (1840).

The Maritime Provinces. Culturally the Maritime Provinces are closely connected with New England and their earliest buildings are of American Colonial type. Mount Uniacke (1813), near Halifax, is a fine colonial mansion with a slender columned portico. Matlock (1840), near Windsor, shows a heavier Classic Revival character. Unlike Quebec, where the houses are stone-walled, these Maritime houses are of wood, painted white, with boarded walls and shingled roofs. There are some good old Classic buildings in Halifax. St. Paul's church dates from the end of the eighteenth century. The Governor's House (1801) and the Legislative Building (1811) are by John Merrick, a local architect.

Ontario. Ontario was settled at a much later date than Quebec and its earliest buildings date from the end of the eighteenth century. In the Niagara peninsula are a number of interesting old churches and houses dating from the end of the eighteenth and beginning of the nineteenth century. They show the delicate detail characteristic of the period and are similar to the contemporary buildings of the northern United States. During the first half of the nineteenth century a number of public buildings of a massive and dignified classic character were built in the rapidly growing cities. Noteworthy are the Court House (1825) and

with the addition of a memorial tower. The octagonal library of the original building still remains.

Architecture after Confederation. After Confederation, in 1867, local differences in architecture tend to disappear, excepting in



EARLY FRENCH-CANADIAN COTTAGE

A cottage on the Montmorency Road, Quebec, showing the typical stone walls and wide eaves.

Photo: McGill University

the Province of Quebec which retains, as is natural, a French quality. Churches and houses tend to follow English models, the churches in varying shades of Revival Gothic, the houses too often aping half timber or Tudor types quite unsuited to Canadian conditions. Office and business buildings follow American models and are often designed by American architects. From 1860 to about 1890 domestic building fell to a very low ebb, redeemed only by a few finely designed square houses of Italian Renaissance type. Even in these the internal decoration is usually very heavy.

Church Architecture. In church architecture St. Patrick's Church (1847), Montreal, a severe design by the Reverend Father Martin, shows that fine quality can emerge even from mid-nineteenth century Gothic. Trinity College Toronto (1850); St. James Cathedral, Toronto (1853); and Christ Church Cathedral, Montreal (1856), show the tendency to copy English forms. Christ Church Cathedral, Fredericton, is professedly a copy of Snettisham Parish Church in England.

Richardsonian Romanesque. The peculiar style introduced in the United States by H. H. Richardson and often known by his name as Richardsonian Romanesque appears in a number of Canadian buildings



THE OLDEST HOUSE IN CANADA

It is at Sillery, Quebec.

Photo: Canadian Official News Bureau

the City Hall at Kingston, the Court House at Brantford, and Osgoode Hall in Toronto (1860).

A case of architectural patriotism is shown in the Parliament Buildings at Ottawa, built in 1886, in a Gothic style intended to suggest the Houses of Parliament at Westminster. The main building was burnt in 1919 and rebuilt in a similar style



MODERN BUILDINGS

Left: Plaza Chateau and Union Street Station, Rideau Street, Ottawa. Right: Royal York Hotel, Toronto, the largest hotel in the British Empire.

Photos: Fox; Canadian Pacific Railway

in the 'eighties and 'nineties. The Redpath Library (1880) and the Physics Building (1898), both of McGill University; the Canadian Pacific Station, Montreal, and the City Hall, Toronto (1890) are all Richardsonian. The same influence to a lesser degree can be seen in the fine Legislative Buildings in Victoria, B.C. (1894).

Commercial Buildings. The Canadian Pacific hotel in Quebec was built by Bruce Price in 1890 in a style derived from the French chateaux of the Loire and named Chateau Frontenac to suggest to the tourist a French and a romantic setting. This was followed by the Chateau Viger in Montreal, the Chateau Laurier of the Canadian National in Ottawa and the C. P. hotel in Victoria all heavily reminiscent of Francis I, the Loire, and romance.

Business buildings tend to follow American models. The Canadian Bank of Commerce buildings in Winnipeg (1906) and in Montreal (1907) show the heavy Classic dominant in American public buildings in the early twentieth century.

The C. P. Building in Toronto (1913) and the Southam Building in Calgary (1913) mark the entry of the skyscraper into Canada. Both of these are as fine in design as any buildings of their kind. Since then

numerous high buildings have been put up. The type was created by a business boom and in its extreme manifestations, it is probably already of the past.

University Buildings. Hart House, University of Toronto (1914) and the new medical building of McGill University (1907) show the American tendency to use English Gothic and Tudor forms in University buildings. Scottish "baronial" forms appear in the Royal Victoria Hospital, Montreal, (1887), modelled after Edinburgh Infirmary where so many of the medical men of the day were trained. The medical buildings of the University of Alberta (1920) are, however, English in character in red brick and white stone. The Union Station at Toronto (1919) is American Classic of the McKim school; the Legislative Building at Winnipeg, by an English architect, is an imposing building of full-dress English Palladian Classic.

Conclusion. Canada to-day contains many well-designed buildings, but for unity we look in vain. English, American, Scottish, and French influences are everywhere apparent but as yet little that bears the stamp of Canada. The Canadian climate and ways of life call for an architecture adapted to them and developing out of them, but, as yet, the architects have not been able to mould to

their needs the various historic styles and national sentiments of the past. French Canada had for about 150 years a definitely Canadian architecture. The rapid growth and commercial expansion of the country destroyed that architecture and nothing has been re-created to take its place.

The tendency in modern architecture to rely upon climate, construction, and material as the bases of architectural design and the tendency to reject the mere copying of historic "styles" may be expected to have a healthy result. The young architects are to-day being trained in Canada in a Canadian tradition and in them lies the hope for a genuine and expressive Canadian architecture. See ARCHITECTURE; GOTHIC.

ARCTIC ARCHIPELAGO. The islands north of the mainland of Canada, the principal being Baffin, Ellesmere, Victoria, King William, Prince of Wales, Devon, Banks, Melville. Canada's title rests on discovery by British explorers, formal transfer to the Dominion by the Imperial Government, and the fact that the islands have been officially taken possession of, occupied and administered for many years.

ARMY, CANADIAN. See ARMY, Vol. I.

ART. The arts of painting and sculpture cannot be said to flourish lavishly in young countries, and for that reason the early development of Canadian art, especially in the field of painting, is the more noteworthy. Both in French- and in English-speaking Canada, during the pioneer period, there were, in official and military circles, many amateurs gifted with pencil and brush who exercised their hobby. It is to them that we owe many pictorial records of the early days.

Painting. The serious artist, who worked at his craft as a calling, appeared on the scene in centres like Toronto and Montreal about the time of Confederation. Painters formed the Society of Canadian Artists with headquarters at Montreal. The man responsible was an English portrait painter, John Bell-Smith, who had entered Canada in 1866. He had been for seventeen years Secretary of the Institute of Fine Arts, London. The painters whom Bell-Smith's organizing impulse brought together included several men whose work still commands attention and yields higher prices than these painters dreamed of during their lifetime—such men as Cornelius Kreighoff, O. R. Jacobi, Daniel Fowler, and John A. Fraser. (See JACOBI; KREIGHOFF, Vol. IX.) None of these was native born; two were Germans and two were British, but all were artists of ability and distinction. Fowler and Fraser have long been recognized as among the finest water colourists of the mid-Victorian period. Fowler, who excelled

in still life, was unique in the opulence of his colour as well as the perfection of his drawing. Fraser, who later removed to New York, became internationally famous for his landscapes. Jacobi, an oil painter, treated Canadian landscape with poetic imagination and sure individual touch. The Society of Canadian Artists disappeared with the establishment in 1880 of the Royal Canadian Academy by the Marquess of Lorne (afterward Duke of Argyll) who was Gov-



Oxen Drinking
MORATIO WALKER, R.C.A.
(National Gallery of Canada)

ernor-General of Canada and husband of Queen Victoria's daughter, Princess Louise. The Academy's first President was Lucius R. O'Brien, a water colourist of distinction. As early as 1872, however, there had arisen at Toronto a vigorous organization, the Ontario Society of Artists, which still flourishes.

The real pioneers in recording the distinctively Canadian scenes, who vanished never to return, were Paul Kane (see KANE, PAUL, Vol. IX), and Cornelius Kreighoff. Kane depicted the life of the red man; Kreighoff, French Canadian "habitant."

So rapidly did enthusiasm for art develop that within twenty-five years after Confederation a great many painters born or reared in Canada were at work. It is interesting to

note that the Scottish strain was predominant among them. Their craftsmanship and range of effort has not been surpassed by their successors, but unfortunately many of the ablest of them became expatriates. The limited Canadian field compelled them to seek opportunity elsewhere, though most of them retained association with Canada. There was, for instance, Wyatt Eaton a native of Phillipsburg, Quebec, who became a friend and associate of Millet, and later one of the most active figures in the art life of New York. John A. Fraser's pupil, J. Henry Sandham, a native of Montreal, was one of the most gifted water colourists of his time, but his creative years were spent in Boston and London. John Colin Forbes, a native of Toronto, early achieved fame as a portrait painter in London and painted Gladstone and other Victorian statesmen. His declining years were spent in Toronto. William Blair Bruce, a native of Hamilton, Ontario, and a painter of remarkable versatility and command of his brush, spent most of his life in France and Sweden, where he became eminent. Fortunately a collection of his finest works was bequeathed to his native city. Elizabeth Stanhope Forbes, a native of Kingston, Ontario, not only married a distinguished London painter but became one herself.

There has been no more notable Canadian painter than the late James W. Morrice, a native of Montreal. He was for many years a resident of Paris, where for a time he held office as Vice-President of the Société Nationale des Beaux-Arts. His pictures hang in many famous galleries in Europe and North America. He preferred to work on small canvases. Delicacy of colour and perfection in suggesting atmosphere were his special attributes.

Another eminent expatriate is James Kerr Lawson who came to Canada from Scotland as an infant. As a young man he was a promising painter in Toronto but for many years has lived in London, and is the most brilliant of British architectural painters. His works are perfect in drawing, lovely in colour, and unique in translucent atmosphere. He has been called the "modern Canaletto." Two of his noblest murals, painted for the Canadian War Memorials collection, "Arras, the Dead City" and "The Cloth-Hall at Ypres" hang in the Senate Chamber at Ottawa.

Ernest Lawson, a leader of the modern landscape school, and a painter of rare individuality, is, though usually classified as an American artist, a native of Halifax.

One of the most facile of Canadian painters was Paul Peel, a native of London, Ontario, who died in 1892 at the early age of thirty-

three. He had already won European fame through his association with Benjamin Constant in Paris. He was a master of the nude, and especially happy in the painting of children. His most famous work "After the Bath" was purchased in 1890 by Hungary and hung for more than thirty years in the National Gallery at Budapest. After the war it was sold to a Canadian purchaser and returned to the land where it was painted.

Among other eminent Canadian expatriates whom France has claimed is Frank



A Venetian Bather
PAUL PEEL (1859-1892)
(National Gallery of Canada)

Armington, noted for his Parisian vistas, and his wife Caroline Armington, one of the most brilliant of contemporary etchers. Both are natives of Ontario.

The doyen of Canadian painters at the present time is Horatio Walker, a native of western Ontario who has for fifty years lived on the Island of Orleans, the heart of French Canada. He is supreme in draughtsmanship and colour, and excels as an animal painter and interpreter of the life of the habitant. His pictures hang in many galleries on both sides of the Atlantic and in his long life he has lived for considerable periods in the United States, Spain, and Russia. Another veteran is Homer Watson, one of the most distinguished of landscape painters, in his prime noted for the power, imagination and glowing colour of his canvases.

Canada has produced few painters so masterly as Aurele de Foy Suzor-Cote, most eminent of French Canadian artists, who is both painter and sculptor. His brilliance and distinction in presenting the life of his compatriots makes every canvas important.



The Habitant Farm
CORNELIUS KRZYZANIAK (1812-1872)
(National Gallery of Canada)

Another interpreter of French Canadian life, who spent most of life as a newspaper illustrator, was Henri Julien. He, however, painted a number of genre pieces of notable quality. Another eminent French Canadian was Charles Edouard Huot, whose work won Honourable Mention in Paris in 1876 when he was but twenty-one. In the latter years of his life Huot devoted himself to historical painting, and splendid murals from his brush adorn the walls of the Parliament Buildings at Quebec.

A distinctively Canadian painter is also George A. Reid of Toronto, a figure craftsman of rare gifts. In the eighteen-nineties Reid devoted himself to depicting the farm life of rural Ontario, among whose scenes he was reared, and his works of this period are permanent memorials of the past day. His vast canvas "Mortgaging the Homestead" is in the National Gallery at Ottawa. His wife, Mary Hiester Reid was a gifted interpreter of flowers and still life. Another notable artistic partnership was that of the McGillivray Knowles, the husband an able marine painter, and the wife a sensitive and brilliant interpreter of gardens, orchards, and poultry yards.

Painters who rose to eminence in the pre-war period include Carl Ahrens (an inspired delineator of trees), J. Archibald Browne (a most poetic and colourful landscapist),

W. E. Atkinson, J. M. Barnsley, Franklin Brownell, William Brymner, John Hammond (the last two eminent in presenting Rocky Mountain scenes), William Cruikshank, F. S. Coburn (a pastoral painter of individuality), W. St. Thomas Smith (rarely gifted as a marine painter), Maurice Cullen and Clarence Gagnon (both brilliant interpreters of snow scenes), Charles W. Simpson, and Robert Holmes (the latter a water colourist who left behind him a collection of studies of woodland flowers of permanent importance).

Canada has never lacked portrait painters of ability. Among the famous men of the past was Robert Harris, a Prince Edward Islander, whose "Fathers of Confederation" is, in a popular sense, the most famous of all Canadian pictures and admirable in the fidelity of its likenesses. Another brilliant portraitist was the late Dickson Patterson, noted for his studies of public men. Sir Edmund Wyly Grier, President of the Royal Canadian Academy, has many distinguished portraits to his credit. His predecessor in that office, the late G. Horne Russell, was also accomplished in portraiture and a gifted marine painter as well. Other Canadian portrait painters of sincerity and distinction are A. Curtis Williamson, Ernest Fosbery, Kenneth Forbes, and Allan Barr.



Village in the Laurentians
CLARENCE A. GAGNON, R.C.A.
(National Gallery of Canada)

Nearly all the painters to whom allusion has been made have been of eastern Canada, but the rugged life of the prairies, mountains, and outposts has not lacked its interpreters. Many years ago Frederick A. Verner, a native of Ontario, after youthful wanderings



CANADIAN SCULPTURE

Sculptors are less numerous than painters though their art goes back farther in Canadian history. The art of wood carving was early introduced in French Canada.

1. Statues in the church at Loretteville, Quebec. 2. Prowling Panther by A. Phimister Proctor, N.A. 3. The Old Pioneer by Aurele de Foy Suzor-Cote, R.C.A. 4. Figure of Canada on the front wall of the Canadian Memorial, Vimy Ridge, France, by W. S. Allward. 5. Bust of Vilhjalmur Stefansson by Emanuel Hahn, A.R.C.A.

Photos: National Gallery of Canada; Canadian Government; Canadian National Railways

that included service under Garibaldi in Italy, returned to Canada resolved to paint the life of the prairies and the diminishing buffalo. He was a painter of considerable power and his pictures to-day command high values. John Innes of Vancouver, who

ideals in the approach to nature have not necessarily been confined to the group above mentioned. His brother, George Thomson, though he prefers the cold tones of early spring, paints with much the same freedom of style and purity of tone. Another painter,

who has successfully followed the Thomson ideal in interpreting the northland, is Francis H. Johnston. Thomson definitely brought the Canadian northland into art; and clever experimentalists in the Group of Seven like Lawren Harris, A. Y. Jackson, J. E. H. Macdonald, and Arthur Lismer have done much to spread Thomson's ideas and promote a fresh outlook among young painters.

Canada has produced a number of exponents of the various graphic arts who have won international fame. New York has indeed claimed some of the most brilliant illustrators and designers—men like Arthur Crisp, E. Cory Kilvert, Arthur William Brown, Harold Mowat, and Ernest Thompson-Seton. Some who would hold high rank in any centre have remained at home. The coloured woodprints

of Walter J. Phillips of Winnipeg are famous in many countries while such illustrators as Charles W. Jeffreys, who takes the whole of Canadian history as his field, and Arthur Heming, unique delineator of wild animal life and northern wastes, hold outstanding positions in Canadian art.



Georgian Bay
P. M. VARLEY, A.R.C.A.
(National Gallery of Canada)

knew the life of the West half a century ago, has recorded it in a series of splendid mural pieces painted for the Hudson's Bay Company, which have been exhibited throughout Europe. British Columbia's most eminent native-born painter was Emily Carr. She made many able studies of the Indians of the Pacific coast tribes and her pictures are of permanent importance. Edmund Morris, whose youthful experience brought him in contact with many of the western Indian chiefs of pre-railway days, left a collection of portraits of these warriors that is invaluable.

Since the World War there has developed a Modern school in Canada as in most other lands. Once known as the Group of Seven (though the title has ceased to have significance) this coterie took its inspiration from a man of real genius, Tom Thomson, a native of Ontario. Thomson, though self-taught, was a superb colourist and brilliant draughtsman. The crystal purity of his tones, his genius for pattern, and the truth and sincerity of his style make his canvases, particularly those showing autumn in the wilds, ever memorable. He chose to live in Algonquin Park as a guide.

Those who have followed Thomson's



Mortgaging the Homestead
G. A. REID, R.C.A.
(National Gallery of Canada)

Sculpture. Canadian sculptors are less numerous than painters though their art itself goes back much farther in Canada's history. It is impossible to trace the beginnings of Canadian Indian sculpture and its best examples are found on the Pacific coast,

where decorative and symbolic carving was practised in prehistoric days. Most of the subjects deal with wild animals and marine life. On the mainland the material used was wood, but in the Queen Charlotte Islands the Haida Indians developed with a considerable measure of skill similar carving in slate or black argillite.

In French Canada the art of wood carving was introduced in the early days of settlement, and many of the older churches are adorned with fine examples of this craft. Experts in genre wood carving illustrating habitant character are numerous in Quebec.

The versatile Suzor-Cote has also in many beautiful bronzes depicted the life of his compatriots, and all his works in this medium are singularly vital and beautiful.

Monumental sculpture attained distinction prior to the World War and subsequent developments have been of a high order. The most noted Canadian sculptor is Walter S. Allward, whose colossal memorial to the valour of Canadian troops was unveiled on Vimy Ridge, France, in July, 1936. It is a work of the highest imaginative qualities, embracing many symbolical figures. Lesser works by Allward adorn several Canadian cities. The most distinguished predecessor of Allward was Louis Phillipe Hebert whose finest works adorn Montreal and Quebec. Perhaps his most impressive and romantic achievement is the Maisonneuve statue at Montreal. His son, Henri Hebert, has also shown notable gifts, and another well-known sculptor of French Canadian origin is Alfred Laliberte.

R. Tait Mackenzie, of Almonte, Ontario, who also has a home in Philadelphia, has won international fame by the power and movement of his athletic and military sculptures. Among his celebrated works is the memorial to the valour of Scottish troops at Edinburgh, the gift to Scotland of her sons in the United States.

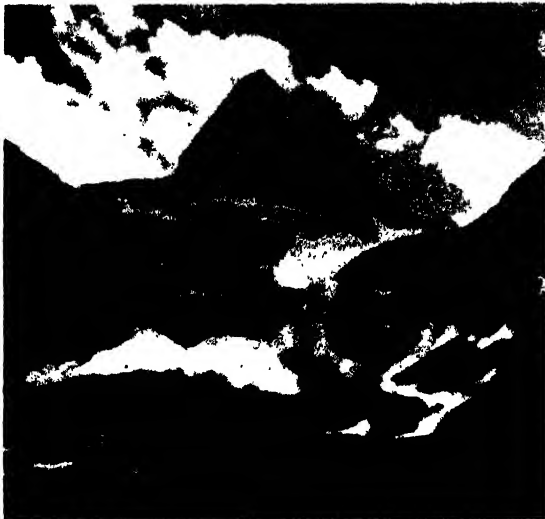
A. Phimister Proctor, recognized as one of the foremost of living animal sculptors, is a Canadian from western Ontario, although he has latterly resided in California. One of his most notable works is the horse in the famous Sherman monument in Central Park, New York, in which he collaborated with Augustus St. Gaudens.

Among the younger sculptors, Emmanuel Hahn of Toronto has able work to his credit, and the unique, poetic studies of Catherine Wallis of Peterborough, Ontario,

have won recognition in Great Britain and France.

ASSINIBOINE, MOUNT. A rugged, beautiful peak in the Canadian Rockies, about fifty miles by trail, or twenty-one miles by air liner, south of Banff. Its height is 11,870 ft. It was named by G. M. Dawson in 1884, after a tribe of Indians who hunt in the Rockies. It was first climbed by Sir James Outram in 1900.

ASTRONOMY. It has very frequently been said that the degree of civilization of a country can be judged by its support of

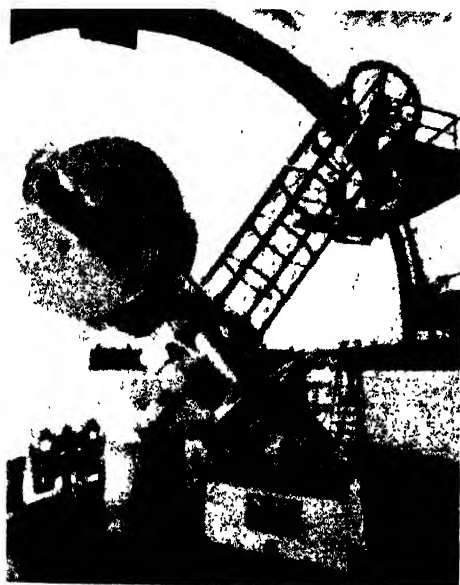


MOUNT ASSINIBOINE
Photo Canadian Official News Bureau

astronomy. With three large observatories devoted to this science, having telescopes the second and third in size in the world, Canada, especially considering her population and resources, takes a remarkably high rank. See OBSERVATORY; TELESCOPE.

Early Developments. Real progress in the development of astronomy in Canada is of comparatively recent date. Even late in the nineteenth century, except for cultural teaching in the universities and for the applications to time and navigation, astronomical work was limited to its use by the Dominion Government in surveying operations. The boundaries of the western prairie provinces, as well as their subdivision into sections, are along meridians and parallels astronomically determined, and, even more important, the boundary between Canada and the United States is also mainly astronomically defined, for example, the boundary for about 1500 miles is along the forty-ninth parallel of north latitude. See LATITUDE.

With this pioneer astronomical work, the name of W. F. King is intimately associated, and, indeed, he may justly be considered the founder of Canadian astronomy. First permanently appointed to the Government service in 1881, he was made Chief Astronomer in 1890 and H.M. Commissioner for International Boundaries in 1892. The boundary marking and the astronomical determination of longitudes and latitudes



72-IN. REFLECTING TELESCOPE AT THE
DOMINION ASTROPHYSICAL OBSERVATORY
Note the man to appreciate its size.

Photo Edgar Fleming

formed the principal work of the Astronomical Branch until the beginning of the present century.

Soon after appointment as Chief Astronomer, King made application for a modest observatory as headquarters for this work and for some research, but was at first unsuccessful. It was not until the tenure of Clifford Sifton as Minister of the Interior (1896-1905) that King's outstanding ability and his great services to Canada on boundary questions, particularly his preparation of the Canadian case in the Alaska Boundary question, were fitly recognized and his dream of a national observatory for Canada was realized. The Dominion Observatory, a handsome stone structure on the Experimental Farm at Ottawa, was completed and occupied in 1905. Before describing its work, it will be well to consider the development of another phase of the science.

Educational Development. In 1890, a society of amateurs for the study of astronomy was formed at Toronto. The group included members of the staffs of the Meteorological Observatory and the University of Toronto, and was developed about 1900 under the fostering care of Professor C. A. Chant. The organization became the Royal Astronomical Society of Canada in 1902 and, largely through Chant's efforts, became national in character about 1906 by the formation of sections of the Society at Ottawa and other centres throughout Canada. The work of the Society in creating interest in astronomy has undoubtedly favourably influenced public opinion and enlisted public support for the science.

Similarly the study of astronomy, which had previously been limited to a few lectures on the general principles in mathematical departments of the universities, or to instruction in its practical applications in the engineering schools, entered into a new phase by being made in 1905 a full course of instruction at the University of Toronto under Professor Chant.

Dominion Observatory. The scientific work of the Dominion Observatory, which was equipped with a 15 in. refracting telescope, a meridian circle, and other accessory apparatus, was organized by King (appointed director in 1905) into three main divisions: (a) Geophysical work, including seismology, terrestrial magnetism, gravity and allied subjects, was under the supervision of Otto Klotz. (See GRAVITY; MAGNETISM.) (b) Meridian work, including the determination of time, of longitudes and latitudes throughout Canada, and of the absolute positions of a selected programme of stars, was supervised by R. Meldrum Stewart. (See LATITUDE; LONGITUDE; MERIDIAN; STAR.) (c) Astrophysical work, mainly stellar spectroscopy with the 15 in. telescope, and the spectroscopic determination of the solar rotation by means of a coelostat telescope, was under the supervision of J. S. Plaskett. This was a happy combination of the practical application of astronomy with abstract research in the science, and enabled government support for the observatory to be more readily obtained. This division of the work has continued, practically along the same lines, to the present time, and a fine record of valuable scientific work has been attained.

Geophysical work falls rather outside the scope of this article. It was, however, ably directed by Klotz, who was associated with King from the first, and assisted in the establishment of the Dominion Observatory. After King's death in 1916, Klotz succeeded as director 1918-1923. Stewart's



THE DAVID DUNLAP OBSERVATORY

Situated at Richmond Hill, Ontario, the observatory is the gift of Jessie Donalds Dunlap to the University of Toronto as a memorial to her husband. It was opened on 31st May, 1935.

ability and originality had full scope in the meridian work at the observatory, which he brought to a high state of efficiency. A defective meridian circle was practically rebuilt and many new devices for making the combination of clock, chronograph, and meridian circle highly accurate were installed. This enabled the electric time service throughout the Dominion buildings, established by Stewart, to be made more accurate, and placed the astronomical determination of longitudes, and international co-operation in such determinations, on a firm foundation. It is also essential in obtaining the absolute positions of the stars, the research part of the meridian programme. Stewart succeeded Klotz as director in 1924.

The astrophysical work at the observatory consisted mainly of stellar and solar spectroscopy. The original spectroscope attached to the 15 in. refractor was not sufficiently rigid and was replaced by an efficient modern type, designed by Plaskett and of home construction. Similarly a new photographic correcting lens for spectroscopic work with a visual refractor was tested and corrected for aberrations (see ABERRATION), resulting in the equipment becoming the most efficient of its size extant. Numerous auxiliary researches on improvement in spectroscopic design and method and an extended programme of the observation of spectroscopic binaries were undertaken and were energetically prosecuted.

Dominion Astrophysical Observatory. The rapid completion of the brighter binaries brought ever nearer the day when the remaining examples would be too faint for successful observation with a 15 in. telescope. A vision began to form in Plaskett's mind of a larger telescope for Canada to extend the work so successfully begun. This vision took more definite form after a visit to the Mt. Wilson Observatory in 1910, where the new 60 in. reflector had proved such an outstanding success. Henceforward much of Plaskett's energy was devoted to means of

obtaining a large reflecting telescope for Canada, of aperture at least 60 in., preferably 72 in. King fully endorsed and ably helped this project. After a close struggle, the contracts for a 72 in. reflecting telescope were awarded in October, 1913.

The specifications and the general design of the telescope were laid down by Plaskett, and the instrument has been so successful that it has served as a model for more recent reflectors. The mounting was completed and erected in November, 1916, near Victoria, B.C., where careful tests had shown especially suitable astronomical conditions. The mirror was not completed until April, 1918, and observations commenced in May. Plaskett was appointed director of the Dominion Astrophysical Observatory in 1917 and, accompanied by one astronomer, they began observations. They carried on unaided until 1919 when two more astronomers were added to the staff, and an additional one was appointed in 1927.

Plaskett retired in 1935 and was succeeded in 1936 by W. E. Harper.

Space does not permit more than a brief mention of some of the work. About one-third of all the radial velocities measured, spectroscopic binaries discovered and their orbits determined, as well as a good share of the spectroscopic parallaxes obtained, are to the credit of the observatory. In addition numerous important astrophysical researches have been completed, perhaps the most striking being the observational proof that the galaxy is rotating in its own plane, around a centre about 33,000 light years from the sun, in a period of about 220,000,000 years, at a speed of 175 miles per second.

David Dunlap Observatory. The two national observatories are not the total of Canada's contribution to astronomy. A third major observatory, completed in 1935, has been added through the untiring efforts of Professor Chant. His dream of obtaining a large telescope for the University, advanced by lectures and talks throughout the country,

seemed, some five years ago, about to be realized. A wealthy mining engineer, David Dunlap, became interested in astronomy and was favourably inclined towards Chant's project. His untimely death seemed a great blow to the cause, but his widow gave as a permanent memorial the great observatory dedicated in his name. This magnificent gift to astronomy in Canada, a handsome stone observatory with a 74 in. reflecting telescope, modelled after the 72 in., was formally opened and presented to the University by Mrs. Dunlap in May, 1935. As at present planned the main work is to be spectroscopic, but there are all necessary

of the classics of French Canadian literature. He also published his *Mémoires*. After his death a volume of his sketches was brought out under the title *Divers*.

AVIATION. Military flying in the Dominion of Canada is confined largely to the minimum needed for training purposes. The civil branch of aviation is used for purposes of exploration, reconnaissance surveys, forest protection from fire hazard, and the various activities of the Royal Canadian Mounted Police. Up to the present, commercial flying has been developed more in northern Canada than in the settled provinces. In the North it has been of inestimable value in the carriage of mails, passengers, and freight to out-of-the-way parts of the country formerly almost inaccessible. Much the largest of the companies engaged in this work is Canadian Airways, Limited. As there are practically no landing fields, and innumerable lakes, sea-planes are used entirely in northern Canada. Plans are well advanced for a coast-to-coast air service across southern Canada, for mails and eventually for passengers and express, and the Dominion Government has nearly completed (1936) a series of permanent and emergency landing fields from the Atlantic to the Pacific. See COMMUNICATION AND TRANSPORT, Vol. IX, page 4744, also illustration on page 4734.



ATHABASKA RIVER
Photo: Canadian National Railways

facilities for direct photography and other uses of the instrument. See ASTRONOMY.

ATHABASKA, LAKE. In the north-eastern corner of Alberta and the north-western corner of Saskatchewan, Lake Athabaska has an area of 2762 sq. miles. It was discovered by Peter Pond (see article in this volume) in 1778.

Fort Chipewyan, one of the principal posts of the North West Company, and later of the Hudson's Bay Company, was built on its shores in 1788. The lake is a noted breeding ground for the Canada goose.

ATHABASKA RIVER. It rises in the Rocky Mountains, near the head waters of a branch of the Saskatchewan, and empties into Lake Athabaska after a course of about 765 miles. It was discovered by Peter Pond in 1778. It has been known at various times as Elk River and Rivière à la Biche.

AUBERT DE GASPE, PHILIPPE (1786-1871). Novelist, born in Quebec, of an old French family. He studied law, and was for years High Sheriff of the district of Quebec. After his retirement, he wrote *Les anciens canadiens*, which has been twice translated into English, by Georgiana Pennee and by Sir Charles Roberts, and is regarded as one

AYLMER, MATTHEW WHITWORTH AYLMEER, BARON (1775-1850). British soldier and statesman. He saw military service in the West Indies, Holland, and under Wellington in the Peninsula, and in 1825 was promoted to the full rank of General. He was appointed Governor of Canada in 1831. Like Dalhousie, his relations with the French Canadian majority were not at all friendly, and he returned to England in 1835.

AYLMER, MATTHEW AYLMEER, BARON (1842-1923). Born in Melbourne, P.Q. He saw service in the Fenian raids in 1866 and 1870. He became Adjutant-General of Canada in 1896, and in 1906 Inspector-General of the Canadian forces.

BACK, SIR GEORGE (1796-1878). An English Navy officer, who accompanied Sir John Franklin on his Arctic expeditions of 1818, 1819-1822, and 1824-1827. He led an expedition through northern Canada (1833-1835) to the Arctic coast and discovered the Great Fish River, which was renamed Back's River. In 1836 he explored the Arctic coast from Regent Inlet to Cape Turnagain.

BACK RIVER. A river of the North West Territories that rises in the country north-east of Great Slave Lake and empties into



CIVIL AVIATION

1. Ambulance 'plane. 2. Winter mail transport from Quebec to the north shore of the St. Lawrence Gulf. 3. Unloading a boiler. This and five others, each weighing over 900 lbs., were taken 125 miles from the rail head to a mine site in northern Quebec. 4. Three thousand white fox pelts sent by 'plane.

Photos: Canadian Airways Ltd.

the Arctic Ocean, after a course of 605 miles. It was discovered and explored by Sir George Back. See article above.

BAGOT, SIR CHARLES, Bart. (1781-1843). British statesman. After a number of years in the diplomatic service, during which he served as ambassador to France, the United States, Russia, and Holland, he became Governor-General of Canada in 1841, and remained until 1843. His term of office covered the important period following the union of Upper and Lower Canada and the establishment of responsible government.

BALDWIN, ROBERT (1804-1858). Statesman, born in Toronto, then known as York. In public life he was the leader of the party that sought reform by constitutional means. He had no sympathy with Mackenzie or the Rebellion of 1837-1838. He was successively Solicitor-General and Attorney-General of Canada. In 1842 he introduced the Bill to create a non-sectarian University of Toronto. Twice he was associated with Sir Louis Hippolyte Lafontaine, the French Canadian Liberal leader, as joint head of a Ministry. The Baldwin Act, which he introduced, was the foundation of Ontario's form of municipal government.

BANKING AND CURRENCY. Banking in Canada began in 1817 when the Bank of Montreal first opened its doors for business.

The need for banking facilities and particularly for a uniform currency had long been felt, especially in the centres of business at Quebec, Montreal, Kingston, and York (Toronto). Once the first bank was established, others soon followed, and after a relatively few years institutions with the right of note issue were operating in the above cities, as well as in St. John and Halifax, the chief cities of the Maritime Provinces. By the time the Dominion was formed, there were 28 banks in existence in Canada, having a total of about 120 branches.

The steady expansion of banking facilities in Canada from Confederation onward took place generally by the extension of existing banks through new branches rather than by the formation of new companies. Thus by the end of the century the number of banks was only 34, while the number of branches increased from 123 in 1868 to 747 in 1902. The first two decades of the present century, a period of rapid economic development in Canada, witnessed a further striking growth in banking institutions. From 1145 branches in 1905, the number grew to 3527 by 1936.

Concurrently with this increase in branches, there was a gradual decrease in the number of banks, chiefly by amalgamation.

and by 1936 there were only 10 banks doing business in Canada.

Canadian banks have not limited their activities to the domestic field, but have been extremely enterprising in extending their operations to other countries, particularly to the West Indies and Central and South America. By 1936 there were 149 branches of Canadian banks doing business in other countries.

Banking Legislation. The British North America Act of 1867 gave the Dominion Parliament exclusive jurisdiction over bank-

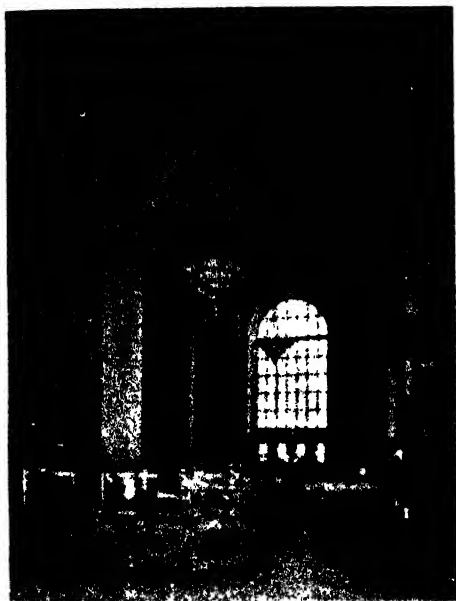
went a long way toward keeping the irresponsible out of the field of banking, and forced the development of branch banking. (3) Banks were prohibited from taking mortgages on real or immovable property. This provision rightly precluded the banks from entering a field which, in a new and growing country, is bound to be particularly hazardous and unsuitable as a sphere for the investment of the assets of commercial banks. Important changes have been made successively at the end of each ten-year period. In general, each revision has provided for a greater measure of protection to the public, as well as more comprehensive monthly returns of information regarding the banks' operations to the Minister of Finance.

The 1934 amendments to the Bank Act contain many important changes incidental to the establishment of the central bank. It was decided that the sole right of note issue in the country should rest with the Bank of Canada. Accordingly, provision was made for a gradual reduction in the circulation of chartered bank notes to take place during the ten-year period beginning 1st January, 1936.

From the beginning, Canadian banks have been free from legislative control over the volume of cash reserves which they should maintain against their liabilities. With the establishment of the Bank of Canada, however, they are required to hold a reserve up to at least 5 per cent of deposit liabilities in Canada. This reserve may be held in Bank of Canada notes and in the form of a deposit with the Bank.

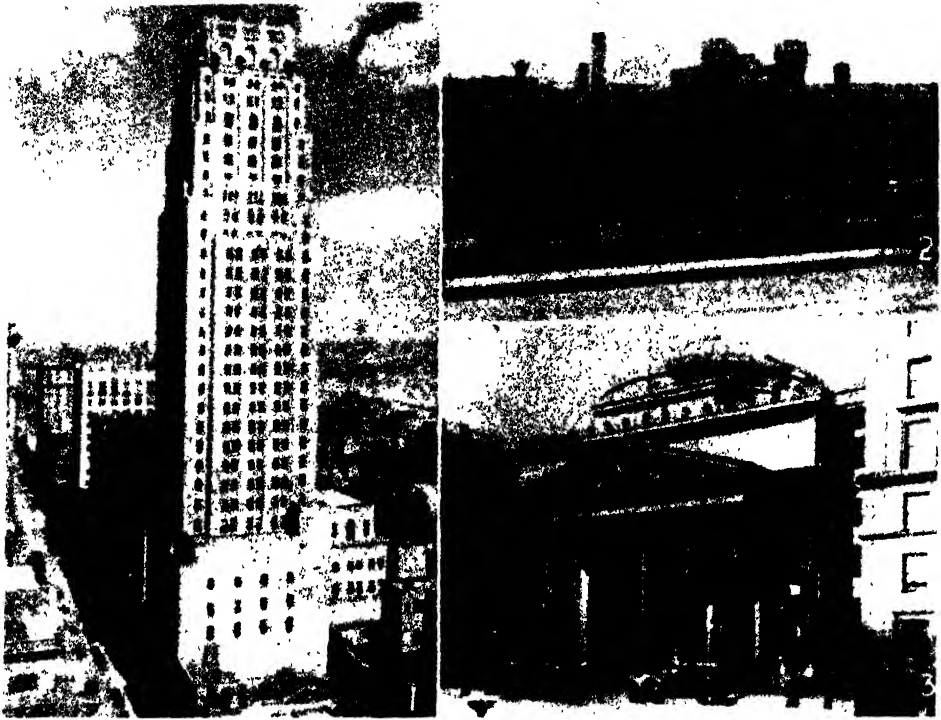
Operations of the Banks. The lending operations of the Canadian banks are carried out through the branches. In charge of each branch is a manager who has received his training and acquired a varied experience in other parts of the Dominion or abroad. On his own authority and discretion the branch manager may make loans up to a certain amount. Loans beyond this limit demand reference to the district supervisor or to the Head Office. Each branch is subject to inspection at least once a year at irregular intervals by the bank's own inspectors.

The investment business of the banks is conducted by the Head Office. In addition to buying and selling on their own account, the banks carry out orders of their clients, charging a certain commission for their services. The Head Office also effects the proper distribution of banking funds for loans through the country. In certain districts the supply of loanable funds received over the counter by way of deposit may exceed the demand for loans in that area. These surplus funds are sent to the Head Office and directed to those branches where more is



CANADIAN BANK OF COMMERCE
The interior of the bank in Toronto.
Photo Canadian Government

ing in Canada. In 1871 the first comprehensive Banking Act was passed. This Act adopted and consolidated much of the previously existing banking legislation and incorporated some new provisions. Several important features of this Act, extremely significant to the development of banking in Canada, may be noted. (1) It was provided that the Bank Act should be subject to decennial revision. This was a clear recognition of the importance of banking institutions to the community, and of the principle that changing conditions in the world of finance call for constant vigilance over the legislation designed to safeguard the interests of the public. (2) A limitation on entry into the field of banking was imposed by providing that no bank might be started with less than £100,000 capital. This measure



CENTRES OF CANADIAN FINANCE

1. Canadian Bank of Commerce, Toronto. From this 476 ft. tall building, the highest in the British Empire, about 600 branches are controlled. 2. The Royal Canadian Mint, Ottawa. The chief activity here is the refining of gold for export rather than the minting of coins. 3. Bank of Montreal at Montreal. When this bank first opened its doors for business in 1817 banking in Canada began.

Photos Canadian Official News Bureau, Canadian National Railways

loaned out than is received in deposits. In this way a very effective and economic use of the resources of the banking system is obtained.

An analysis of the distribution of bank loans in Canada shows that a wide variety of interests is given accommodation with no undue concentration in any one sphere. From the latest annual return of this information in 1936, it is found that of total loans made by the banks about 11 per cent went to provincial and municipal governments and school districts, 21 per cent to agriculture, 22 per cent to financial business, 10 per cent to merchants (wholesale and retail), 11 per cent to manufacturing, and 25 per cent to all other groups. At the same time, the banks had large holdings of investments in securities amounting to over 36 per cent of their total assets. Over 82 per cent of these securities were Dominion and provincial direct and guaranteed bonds.

Deposits in the banks fall into two main classes, namely, demand or current account and savings or notice deposit accounts. The

former, on which no interest is paid, constitute what may be regarded as the chief medium of exchange of the country. By far the greater part of the transactions in the business world are effected by means of cheques (see CHEQUE) on current accounts. Savings deposits, which bear interest, have the legal provision that they may be withdrawn only after notice has been given, usually fifteen days. In ordinary practice, the banks do not insist upon this legal right.

The Bank of Canada. Canada was among the last of the important countries to adopt the principle of central banking. The need of such an institution had not been so acute as in many other countries in view of the relatively successful operation of the highly centralized existing banking system. Furthermore, the Finance Act, introduced in 1914, under which the banks had been permitted to borrow legal tender money through the Department of Finance, had to some extent offered facilities usually associated with a central bank. In 1934, however, following a comprehensive survey of the

financial system of Canada by a Royal Commission, Parliament passed the Bank of Canada Act, and on 11th March, 1935, the new institution began operations.

Perhaps no better indication of the aims and functions of the Bank of Canada can be given than by quoting from the preamble to the Act establishing it. Its duty is "to regulate credit and currency in the best interests of the economic life of the nation, to control and protect the external value of the national monetary unit, and to mitigate by its influence fluctuations in the general level of production, trade, prices, and employment, so far as may be possible within the scope of monetary action, and generally to promote the economic and financial welfare of the Dominion."

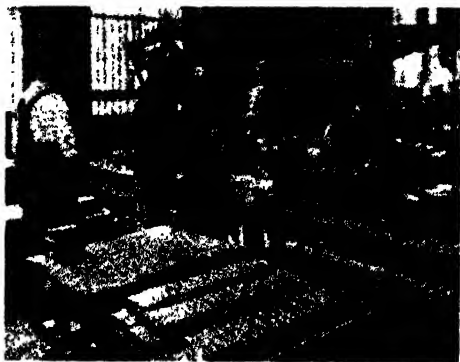
The Bank of Canada may be regarded as an institution designed to operate as an independent "public trust." As originally established, it was a privately owned institution, but an amendment to the Bank of Canada Act in 1936 provided for the purchase by the Government of 51 per cent of the stock of the Bank. The head office of the Bank is at Ottawa, and a branch office is maintained in each province. The chief executive officers (Governor, Deputy-Governor, and Assistant Deputy-Governor) in the first instance were appointed by the Government for a period not exceeding seven years. Subsequently, the directors of the Bank will make these appointments, subject, however, to the approval of the Government. There are thirteen directors, and in order that the board shall be widely representative, it is provided that they must be selected from diversified occupations. Directors, officers, and employees of the chartered banks are ineligible for this office.

The capital of the Bank is \$10,000,000 and was obtained by offering \$5,000,000 of stock to the public and the purchase by the Government of \$5,000,000 of stock. Shares may be held only by British subjects ordinarily resident in Canada, and not more than fifty shares may be held by any one person. Chartered banks, their directors, officers, and employees are prohibited from owning shares. Dividends are limited to 4½ per cent. Profits in excess of this, after making appropriate provision for reserve, are paid over to the Government.

The Bank of Canada does not deal directly with the public in the manner of commercial banks. Rather, it is a bankers' bank. It maintains a reserve of credit available to the banking system as a whole. The chartered banks may borrow from it, and the rate at which the Bank is willing to lend funds is usually known as the discount rate or the re-discount rate (see *DISCOUNT*). By

raising or lowering this rate, the Bank may discourage or encourage chartered bank borrowings, which, in turn, may affect the disposition of the chartered banks toward lending to the general public.

Also, the Bank may buy and sell securities in the market. This places another important instrument of credit control in the hands of the Bank. As mentioned previously, deposits in the Bank of Canada and Bank of Canada notes constitute the cash reserves of the chartered banks and by law a reserve of at least 5 per cent must be maintained. Upon these cash reserves depends the banks' lending power. Thus in



ROYAL CANADIAN MINT, OTTAWA
Weighing ingots of fine gold before export.
Photo: Pringle and Booth Ltd

buying securities from the public and paying for them by means of its own cheque or notes, the Bank of Canada automatically increases the cash reserves of the banking system. Conversely, when it sells securities, the cash reserves and lending power of the banks are decreased. The buying and selling of securities are commonly known as open market operations. Together with the discount rate, they constitute the chief mechanism of control over credit.

The Bank may act as the fiscal agent for the Dominion and the provincial governments, and also may make loans up to a limited amount to these authorities. Deposits in the Bank of Canada, whether by the banks or by governments, do not bear interest. Against these deposit liabilities and its notes outstanding, the Bank of Canada Act requires that a gold reserve of at least 25 per cent must be maintained. In this way, the Bank is limited in its capacity to expand credit (which see), and this expansion is made dependent upon the volume of gold reserves in the country.

On the date of opening, the Bank of Canada assumed the liability for all

Dominion of Canada notes outstanding. In exchange for this, the Government transferred to the Bank gold, silver bullion, and bonds to a similar amount. Since that date, Dominion notes have been gradually retired from circulation and replaced by the Bank's own notes, which, of course, are legal tender for all transactions. The chartered banks were required to deposit all their gold in the Bank and received in exchange credits at the rate of £4.306 an ounce, except in respect of such proportion as was deemed to have been held against foreign liabilities, in which case the full market value of about £7 an ounce was allowed. The profit on the gold turned over at the standard rate went to the Government, and was placed in a special stabilization fund to be used when occasion demands for controlling the price of the Canadian dollar in the foreign exchange markets.

Savings Banks. All of the chartered banks in Canada have savings departments, and they have attracted by far the greater part of the country's saving deposits. But, in addition to the facilities offered by the commercial banks, there is a distinct group of savings banks which hold a substantial volume of current savings. First of all, there is the Post Office Savings Bank, which is available to all who wish to utilize it. Then, too, provincial government savings offices are operated in Ontario and Alberta. Finally, in the province of Quebec there are two important savings banks which were established under Dominion legislation, and a large number of small co-operative banks throughout the country districts.

Currency. Canada's monetary unit is the dollar, which, under the terms of the Currency Act, consists of 23.22 grains of fine gold. The growing volume of trade and financial transactions with the United States during the middle of the nineteenth century fostered a preference in Canada for the decimal system of money which had previously been adopted south of the line. This method of accounting in dollars and cents was formally adopted by Canada on 1st January, 1858. The Uniform Currency Act of 1871 extended the decimal currency throughout the Dominion, at the same time making the British sovereign legal tender for \$4.86½, the United States eagle legal tender for \$10, and authorizing a Canadian \$5 gold coin.

In general, the use of gold coins has never been very popular in Canada, and the volume of Canadian \$5 and \$10 gold pieces coined is less than £1,000,000. The preference has been for paper notes as hand-to-hand currency. Thus the chief activity of the Ottawa Mint (designated since 1st Decem-

ber, 1931, as the Royal Canadian Mint and made a branch of the Department of Finance) consists of refining gold for export rather than coining it. The greater part of the gold from Canada's mines passes through the Mint, and after refining is usually shipped abroad.

Subsidiary or token coins consist of \$1, 50-cent, 25-cent, and 10-cent silver pieces; 5-cent pieces made of nickel, and 1-cent bronze pieces. The value of the metal content of these coins is considerably less than the face value of the coins. Although authority had existed in the Currency Act for the coining of silver dollars, none had ever been struck until 1935, when an issue was made commemorating the twenty-fifth year of the reign of King George the Fifth. Silver coins are legal tender only up to \$10, nickel coins up to \$5, and one-cent pieces up to 25 cents. On 31st December, 1935, there was \$27,242,166 in silver coins, \$2,434,075 in nickels, and \$2,830,198 in one-cent pieces in circulation, which for the total of the three kinds is an average of about \$3 per person in Canada.

Paper money, which forms the chief circulating medium of exchange in Canada, is of two kinds: Bank of Canada notes and notes of the chartered banks. The former are legal tender, while the latter are not. The Bank of Canada has authority to print notes of any denomination, but the chartered banks are limited in that notes of less than \$5 may not be issued. On 1st January, 1936, Bank of Canada notes to the amount of \$99,700,000 were outstanding, while on the same date the circulation of chartered bank notes amounted to \$111,000,000.

The Gold Standard in Canada. As stated before, Canada, in 1857, adopted gold as the standard of value and provided for a dollar containing 23.22 grades of fine gold, the same as the United States dollar. The currency was continuously maintained on this gold basis until the outbreak of the World War, in 1914, when Canada followed the lead of Great Britain in prohibiting the export of gold, thus effectively suspending the operation of the gold standard.

In 1926 the free movement of gold was again established, but the period of convertibility of the currency into gold was short-lived, and the financial panic of 1931 again required the suspension of the gold standard.

The present Bank of Canada Act provides that the Bank shall sell gold to any person on demand, but only in the forms of bars containing approximately 400 ounces. At present (1936) this obligation is suspended, and the export of gold from Canada is permitted only under licence from the Minister



A GENERAL VIEW OF MONTREAL

Canada's largest city is situated on an island at the confluence of the Ottawa and St. Lawrence rivers

Photo Canadian Pacific Railway

of Finance. See **BANKS** AND **BANKING**; **MONEY**.

BANKS ISLAND. The westernmost island of the Arctic Archipelago. Its area is approximately 25,000 sq. miles. It was named by the explorer, Sir William Edward Parry, in 1820, after Sir Joseph Banks, then President of the Royal Society of London.

BANTING, SIR FREDERICK GRANT. See article, Vol. I.

BEAUHARNOIS, CHARLES DE LA BOISCHE, MARQUIS DE (1670-1749). Statesman, and admiral in the French Navy, he was in 1726 appointed Governor of New France, and held this office until 1747. He took a deep interest in the exploration of the West.

BENNETT, RICHARD BEDFORD. See article, Vol. I.

BERTHON, GEORGE THEODORE (1806-1892). Portrait painter, born in Vienna. After spending some years in England, he went to Canada in 1841, where he won a high reputation.

BESSBOROUGH, VERE BRABAZON PONSOMBY, NINTH EARL OF (born 1880). Governor-General of Canada 1931-1935. He served in Gallipoli, 1915, and as a staff officer in France, 1916-1918.



LORD BESSBOROUGH
Photo: Topical

BIENVILLE, JEAN BAPTISTE LE MOYNE (1680-1768). Soldier and governor. He was a brother of Iberville, and accompanied him to Hudson Bay. The following year he sailed to the mouth

of the Mississippi, and with Iberville founded Louisiana, of which he became governor.

BLAKE, EDWARD (1833-1912). Lawyer and statesman, born in Adelaide, Ontario. He was elected to the Provincial Assembly in 1867, and became Premier of Ontario in 1871. He was elected to the Dominion House of Commons in 1867, and between 1873 and 1878 was a Member of the Cabinet. He was an outstanding Liberal in Canadian political history. He advocated the federation of the Empire in 1874, and opposed unrestricted reciprocity with the United States. Sir Wilfrid Laurier considered him "the most powerful intellectual force in Canadian political history."

BOMPAS, WILLIAM CARPENTER (1835-1906). Church of England missionary bishop, born in London. From England he went to Canada in 1865, and was sent as a missionary to the Mackenzie River district. In 1874 he

became Bishop of Athabaska; in 1884 he was transferred to the Mackenzie River bishopric; and in 1891 to that of Selkirk. He was an authority on the Athabaskan, Algonkian, and Eskimo languages, and was the author of a number of Indian primers.

BONAVISTA. A town in Newfoundland, on Bonavista Bay, 73 miles north-west of St. John's, with which it is connected by railway. Its commercial interests are mainly concerned with the seal and cod fisheries. An English settlement was made here in the middle of the seventeenth century. Population, 4022 (1931).

BOND, SIR ROBERT (1857-1927). Statesman. He was born in St. John's, Newfoundland, and entered public life in 1882 as a member of the Assembly, of which he became Speaker in 1884. In 1889 he entered the Cabinet of Sir William Whiteway as Colonial Secretary.



SIR ROBERT BOND
Photo: Topical

In 1890 he was one of the Newfoundland delegates sent to Washington to negotiate a reciprocity treaty. In 1895 he went to Ottawa as a delegate to discuss terms of union with Canada. He was Premier of Newfoundland from 1900 to 1909.

BORDEN, SIR ROBERT LAIRD (born 1854). Statesman, born at Grand Pré, Nova Scotia. He became Prime Minister of Canada in 1911, and in 1917 formed the Union government of Conservatives and Liberals. He was a member of the Imperial War Cabinet and the Imperial War Conference, 1917 and 1918. He was one of Canada's representatives at the Peace Conference in Paris, 1919, and took an active part in the creation of the League of Nations. He resigned the Premiership in 1920. One of the elder statesmen, free from the trammels of politics, his ripe wisdom and sound judgment have often been sought in times of crisis.



SIR ROBERT BORDEN
Photo: Topical

BOUGAINVILLE, LOUIS ANTOINE, COMTE DE (1729-1811). French soldier and sailor, born in Paris. He joined the army in 1755 and was sent to Canada as aide-de-camp to Montcalm. He was wounded at Ticonderoga, and took an important part in the siege of Quebec. He afterward joined the French Navy, made a voyage around the world, and served in the American Revolution.

BRANDON. A city of Manitoba, situated at an altitude of over 1000 ft., overlooking the Assiniboine River, 133 miles west of Winnipeg. It is the seat of Brandon College, affiliated with McMaster University at Hamilton. There are large grain elevators and flour mills, besides over fifty factories that make a wide variety of products. Population, 17,082 (1931).

BRANT, JOSEPH (1742-1807). A Mohawk chief, whose native name was Thayendanegea. He sided with the British in the American Revolution. He took part in the Indian Conference of 1793 to settle the problem of tribal lands. He translated part of the Bible into Mohawk. A bronze statue in his honour has been erected at Brantford, Ontario.

BRANTFORD. The county town of Brant County, Ontario. It was settled in 1823 and named after the Mohawk chief, Joseph Brant (which see). The city has ample hydro-electric power. There are over seventy-five factories where agricultural implements, engines, electrical supplies, and other products are made. Population, 30,107 (1931).

BREBEUF, JEAN DE (1593-1649). Jesuit martyr, of a noble family of Normandy. He joined the Jesuit order and was sent to Canada in 1625. The following year he established the first mission among the Huron Indians on Georgian Bay. In 1649 he was captured at his mission by the Iroquois and burned at the stake with incredible cruelty.

BREDA, PEACE OF. Signed between England, France, Holland, and Denmark in 1667. By its terms Nova Scotia was handed over to France.

BRITISH COLUMBIA. See article, Vol. II.

BROCK, SIR ISAAC (1769-1812). British soldier, born in the island of Guernsey. After a varied career in the army, he was ordered to Canada in 1802. He was in command at Fort George the following year. In 1806 he was put in command of the troops in Canada, and by 1811 rose to the rank of major-general. Embarrassed by lack of troops, and hostile influences in the legislature of Upper Canada, he devoted his remarkable energies to the creation of an efficient militia. When war was declared in 1812 he promptly attacked and captured Detroit, General William Hull surrendering

with it the territory of Michigan. In October he died leading his men to the charge at the Battle of Queenston Heights.

BRULE, ETIENNE (d. 1632). Explorer, born in France. He accompanied Champlain on his exploration of the Ottawa River in 1615, and in the next three years made extensive explorations of the country on both sides of Lake Erie and around the north shore of Lake Huron. He was murdered by a party of Huron Indians in 1632.

BRYMNER, DOUGLAS (1823-1902). Archivist, born in Scotland. He settled in Canada in 1857, and in 1872 was appointed Dominion Archivist, a position he held up to the time of his death. He laid the foundations of the remarkable collection of manuscript material relating to the history of Canada now preserved in the Archives at Ottawa.

BYNG, VISCOUNT JULIAN. See article, Vol. II.

CALGARY. See article, Vol. II.

CALLIERES, LOUIS HECTOR DE (1646?-1703). Statesman, born at Cherbourg, France. He was sent to Canada as Governor of Montreal in 1684, and became Governor of Canada in 1699.

CAMPBELL, WILLIAM WILFRED (1861-1918). Poet, born in Kitchener, Ontario. From 1891 to his death he was employed in the government service at Ottawa. Among his books of verse are *Lake Lyrics*, *The Dread Voyage*, *Beyond the Hills of Dream*, *Collected Poems*, and *Sagas of Vaster Britain*.

CANADA. See article, Vol. II.

CANADA BALSAM. See article, Vol. II.

CANADA COMPANY. A colonizing project founded in London in 1824 by the Scottish novelist, John Galt. A considerable area of land was bought in Ontario between Toronto and the Detroit River. William Dunlop, Thomas Talbot, Samuel Strickland, and other pioneers of Upper Canada were associated with Galt in the enterprise.

CAPE BRETON ISLAND. See article, Vol. II.

CARIBOU. See article, Vol. II.

CARMAN [WILLIAM] BLISS (1861-1929). Poet, born in Fredericton, New Brunswick. He became one of the outstanding members of the group of Canadian poets who helped to interpret their country in verse in the latter part of the last century and the first quarter of the present century. His principal books are: *Low Tide on Grand Pré*, *Behind the Arras*, *Ballads of Lost Haven*, *Echoes from Vagabondia*, *By the Aurelian Wall*, *Pipes of Pan* series. His verse has also been brought together in a collected edition.

CARTIER, SIR GEORGES ETIENNE, Bart. (1814-1873). A shrewd and far-sighted

statesman, born in Quebec. He was one of a brilliant group of French Canadian politicians in the second half of the last century. He was associated with Sir John Macdonald in the movement that led to Confederation. He represented the interests of Quebec in the first Dominion Parliament and did much to bring about closer relations between English-speaking and French-speaking Canadians.

CARTIER, JACQUES (1491-1557). French navigator. He sailed from St. Malo in 1534, entered the Gulf of St. Lawrence by the Strait of Belle Isle, and discovered Prince Edward Island, Chaleur Bay, and Anticosti. The following year he again sailed to the New World, discovered and ascended the St. Lawrence to the Indian village of Stadacona, where Quebec now stands, and went on to the Indian town of Hochelaga, on the site of Montreal. In 1541, he made a third voyage to Canada, but did not add anything material to his discoveries.

CATHCART, CHARLES MURRAY, SECOND EARL (1783-1859). British statesman. He had a distinguished career in the army, and in 1845 was appointed Commander-in-Chief of the forces in British North America. He was Governor of Canada, 1846-1847. He was preoccupied with the problem of the Oregon boundary and took no interest in the government of the Dominion.

CHABANEL, NOEL (1613-1649). Jesuit missionary. He was a professor of rhetoric in France before being sent to Canada. He went out to the Huron mission in 1643 and remained there until 1649, when the Iroquois Indians drove the Hurons out of the country. He moved with his demoralized flock to St. Joseph Island in Lake Huron, and near there was murdered by one of his own Indians.

CHAMPLAIN, SAMUEL DE (1567-1635). French explorer, born at Brouage, France. After a voyage to the West Indies, he was appointed Geographer to the King in 1601. Two years later he sailed for Canada, explored the Saguenay River and descended the St. Lawrence. In 1604 he sailed with De Monts to Acadia and founded Port Royal; he explored part of the coast of Greenland. In 1608 he founded the city of Quebec; the same year he led an expedition up the Richelieu River and discovered Lake Champlain. In 1613 he explored the Ottawa River, and lost his astrolabe which was dug up by a Canadian farmer 256 years later. In 1615 he led an expedition up the Ottawa River to Lake Nipissing and the Georgian Bay. From there he crossed Ontario to the foot of Lake Ontario and into the Iroquois country. The remainder of his life was devoted to the welfare of the little town of Quebec, where he died.

CHAPPAIS, SIR [JOSEPH AMABLE] THOMAS (born 1858). Statesman and historian, born in the province of Quebec, a son of one of the Fathers of Confederation. He was for many years a member of the Legislative Council of Quebec, of which he became Speaker in 1895. He was a member of the Executive Council, 1896-1900, and was called to the Senate of Canada in 1919. He represented Canada in the Assembly of the League of Nations, 1930. One of the outstanding historians of Quebec, he is the author of *Cours d'histoire du Canada*, and other works.

CHARLOTTETOWN. Capital of the province of Prince Edward Island. A settlement was originally established by the French on the same site, and was then known as Port la Joie. In 1713 it was a fortified post with a garrison. The population of the place was largely increased, in 1758, by the arrival of a number of Acadians, from the mainland. The island came under British rule in 1763 and Charlottetown received its present name about 1768. It was incorporated as a town in 1855. Its business life is associated with the fisheries and the shipment of potatoes and other agricultural products. Population, 12,361 (1931).

CHARLOTTETOWN CONFERENCE. Held in 1864 in the capital of the little colony of Prince Edward Island, the original idea of the conference was to bring about a union of the three Maritime provinces, Nova Scotia, New Brunswick, and Prince Edward Island. During the meeting, however, representatives arrived from the Legislature of Canada with proposals for a wider federation. These plans were discussed and it was finally decided to call a larger conference at the city of Quebec to consider the terms of union.

CHATEAUGUAY, BATTLE OF. An engagement in the War of 1812-1814. It took place on 26th October, 1813. The scene of the battle was about six miles above the confluence of the English with the Chateauguay River, which rises in Franklin County, New York, and falls into the St. Lawrence about fifteen miles above Montreal. General Hampton was in command of the American troops and Colonel de Salaberry of the Canadian force, with Colonel MacDonell in charge of the reserves. Although Hampton had an overwhelmingly superior force, he was compelled to abandon the contemplated attack on Montreal, and retreat to his own side of the border.

CHINOOK. See article, Vol. 11.

CHRYSLER'S FARM, BATTLE OF. An engagement in the War of 1812-1814. It took place on 11th November, 1813. The

scene of the conflict was near the head of the Long Sault Rapids, on the Upper St. Lawrence River. Morrison commanded the British troops, about 800 men, and Boyd, the American, numbering 1800. Boyd attempted to drive a wedge between the British and the river, but after a stubborn fight was forced to withdraw, suffering a loss of 400 men, against 200 British.

CHURCHILL RIVER, also known at one time as English River. The Indian name is Mississippi. It rises in La Loche Lake in Saskatchewan, near the Alberta boundary, and, after a course of 1000 miles, empties into Hudson Bay. Its mouth was discovered by the Danish navigator, Monck, in 1619, and its upper waters were explored by Joseph Frobisher and other early western fur traders, in 1774-1775.

CLIMATE. Before considering the climate, it is well to note some of the factors which determine it. These include: (1) Geographical position and the altitude of the country above sea-level. (2) The extent of the land masses and their relationship to the oceans. (3) The presence of high mountain ranges. (4) The relation of the country to the general circulation of the atmosphere.

Canada is situated in the northern half of the northern hemisphere, extending from approximately latitude 45° to the Arctic regions. Thus geographically it has a climate characteristic of the temperate and polar regions, but modified on its eastern and western borders by the Atlantic and Pacific oceans, and profoundly affected by the great mountain ranges along the western part of the continent. In this connection we have to consider whether the air masses arriving in the country have travelled over great areas of water or land. If the former, their temperature would not differ greatly from that of the water, and they would absorb an immense amount of water vapour during their passage over the ocean. Consequently one would expect abundant rainfall and snowfall and no great extremes between summer and winter. On the other hand, if the air has travelled over extensive land areas for long distances there would be, especially in northern latitudes, a great cooling in the winter and considerable heating in the summer, thus producing great extremes between winter and summer, while the rainfall would be more variable and much less copious.

The general circulation of the atmosphere is from a westerly direction; consequently on the Pacific coast the climate is tempered by the ocean, and the air masses arriving on the coast carry considerable quantities of moisture. This coastal region therefore is not excessively hot in summer nor ex-

tremely cold in winter. The mountain ranges, however, impose a great barrier to the inflow of this air to the prairie provinces, shutting off the moderating influences of the ocean currents, but exposing this region to the full sweep of air masses moving down from the Arctic regions or from other air masses passing northward from southern areas. Thus we have in these provinces intensely cold winters and generally hot summers.

The region bordering on the Atlantic is affected, due to the general circulation of the atmosphere, by air masses that have crossed great land areas and are therefore subject to extremes, although there are at times frequent inflows of ocean air from the Atlantic. The Maritime provinces have, therefore, a great diversity of climate. If the air masses come from the interior, their characteristics are determined by their previous journey over the land, and they are frequently very cold in the winter and hot and dry in the summer. If they are from the Atlantic, they are seldom very cold or hot, but generally heavily laden with water vapour.

In Southern Ontario and Quebec the air masses come from both north and south, but the northern air masses as they move southward gradually moderate, while those from the south become cooler as they pass northward. These regions, though the temperatures are variable, are not subject to great extremes, and precipitation is distributed fairly uniformly throughout the year. Bearing in mind these main factors that determine the climate, it is comparatively simple to determine the chief features in the various provinces.

British Columbia. The coastal regions of British Columbia are comparatively mild, never extremely cold in winter nor hot in summer, with a rainy season from September to March. Rainfall, especially on the western side of Vancouver Island and on the western slope of the coast range, is heavy, amounting to over 100 in. annually; but on the southern tip of Vancouver Island rainfall is much less and the climate is delightful throughout the year. The high mountain ranges and deep valleys offer great variation in climate. As the altitude and the distance from the ocean increase, it becomes colder and generally drier. Yet in the river valleys of southern British Columbia, fruit farming is a profitable industry, although the rainfall is scanty.

In Alberta the winter climate is variable. It is generally cold owing to the polar air masses moving down from the north, but in some years it may be dominated by the chinook winds. These are a characteristic

feature of Albertan climate. They blow from south-west or west, and while more common in the southern districts are not rare as far north as the Peace River valley. The chinook may cause a rise of 60° in temperature in a few hours. As an illustration of the variability of the climate, in November, 1917, the mean temperature of Calgary was 43° , while in November, 1896, it was only 2° ; in February, 1935, the mean temperature was 30° , but in February, 1936, it was -12° .

During July and August hot, sunny days with temperatures exceeding 90° or even 100° may be expected, but the nights are usually cool. The rainy season is from the middle of May until the end of July, but the amount of rainfall is extremely variable from year to year and serious droughts are not uncommon, more especially in the southern sections.

Saskatchewan and Manitoba climates are similar and definitely continental,

since these provinces are situated almost in the centre of the North American continent. Winters are very cold. North and north-west gales connected with the passage of polar fronts (lines where arctic air masses meet warm air from the south) are not uncommon, sometimes accompanied by blinding blizzards of drifting snow. Occasionally the chinook extends into south-western Saskatchewan as far east as Regina. The change from winter to spring is rapid. The summers are generally warm and few parts escape severe heat waves. The daily range of temperature during the summer is large, amounting at times to 25° or 30° . Frost sometimes occurs in early June or late August, doing considerable damage.

In Saskatchewan the mean total annual precipitation varies from 15 in. to 18 in. of which about 60 per cent falls from the first of May to the end of August. In the south-western portions it is variable and at times drought conditions prevail. The precipitation in Manitoba is somewhat greater than in the other two provinces, and is generally less variable.

In Ontario, due to the large extent of the province, there are wide variations of climate. The winters of the north-western and northern portions are cold, due to the cold waves moving down from the west and north-west. The climate in a large part of the province is tempered by the Great Lakes.

The summers are warm but not oppressively hot, and wholly overcast days are rare. Autumn sets in gradually and usually the first severe frost occurs about 20th September. Northward and eastward from Lake Ontario to the Ottawa valley, spring

opens somewhat later than in the south, though the summer temperature and precipitation are about the same. Killing frosts occur earlier, and in the north the mean temperature of the three winter months is fully 10° lower than in the south. In the entire southern portion there is little variation in the normal monthly precipitation throughout the year. In



MORAINÉ LAKE IN "THE VALLEY OF THE TEN PEAKS"

Photo: Canadian Pacific Railway

the north, winter snowfall is usually heavy.

In Quebec the south-west districts are not protected by the Great Lakes and the winters are therefore colder and the autumn frosts occur earlier. A striking feature of Montreal climate is the rapidity of the advance of spring. March is colder than at Toronto; April has a mean temperature nearly the same; May and the summer months are slightly warmer than in Toronto. In September and October the temperature is similar to that in southern Ontario, but the winters are far colder. At Quebec winter temperatures are 3° to 4° colder than at Montreal, and the summers 2° to 3° cooler. In the Gaspé Peninsula, summer and winter temperatures are colder than at Montreal.

Snowfall is heavy in the St. Lawrence Valley, and it is not until the end of March that the rains are sufficient to commence to carry away the snow. Throughout spring and summer, rainfall is comparatively heavy. In winter, snowfall varies from 7 ft. to 10 ft. and is a great asset to lumbering. The summers are too short for agriculture north of the plateau region.

The Maritime Provinces are generally under the influence of air masses that have traversed land areas for great distances, interrupted at times by invasions of air from the Atlantic, bringing moderating temperatures and often heavy rain or snow. At times in winter severe cold waves from the north-west spread over the provinces, while in summer air masses from the southern plains produce pronounced heat waves. The climate is comparable to that of southern Ontario.

The winters are warmer in some parts of south-western Nova Scotia than in Toronto. In New Brunswick the southern counties have in winter about the same temperature as the upper St. Lawrence valley, while the northern counties resemble the Ottawa valley.

Summers are cooler than in southern Ontario. In the interior of New Brunswick the extremes of heat and cold are more pronounced than in Nova Scotia.

The average precipitation in these provinces is between 40 in. and 45 in., except along the southern coastline of Nova Scotia where it is nearly 10 in. greater. The snow-fall is heavy in northern New Brunswick, where it exceeds 100 in.

Northern Canada. The temperature of the Yukon and the North-west Territories is very low in winter, due to the high latitude and the fact that nearly the whole of this area is under the influence of polar air. The intensity of the winter cold depends upon the latitude and the distance from the Atlantic and Pacific Oceans. Consequently, the coldest parts in winter lie in the Arctic Archipelago. Moderate temperatures occur in summer. See CLIMATE; RAIN; WIND.

COAST RANGE MOUNTAINS. See BRITISH COLUMBIA, Vol. II. CANADA, Vol. II. PLANT LIFE, Vol. IX, page 489.

COMMUNICATION AND TRANSPORT.

In the development of any country, the means of communication and transport are of the utmost importance. This is particularly true in the case of a country like Canada, which has such a vast expanse of territory. Without the facilities of communication between different sections of the country, there cannot be that intercommunication which is necessary to the formation of a united nation. In the case of a community on the frontier without reasonable access to other communities, social progress is virtually impossible, and until exchange of commodities and the disposal of surplus production can be effected, any increase of wealth is practically prevented.

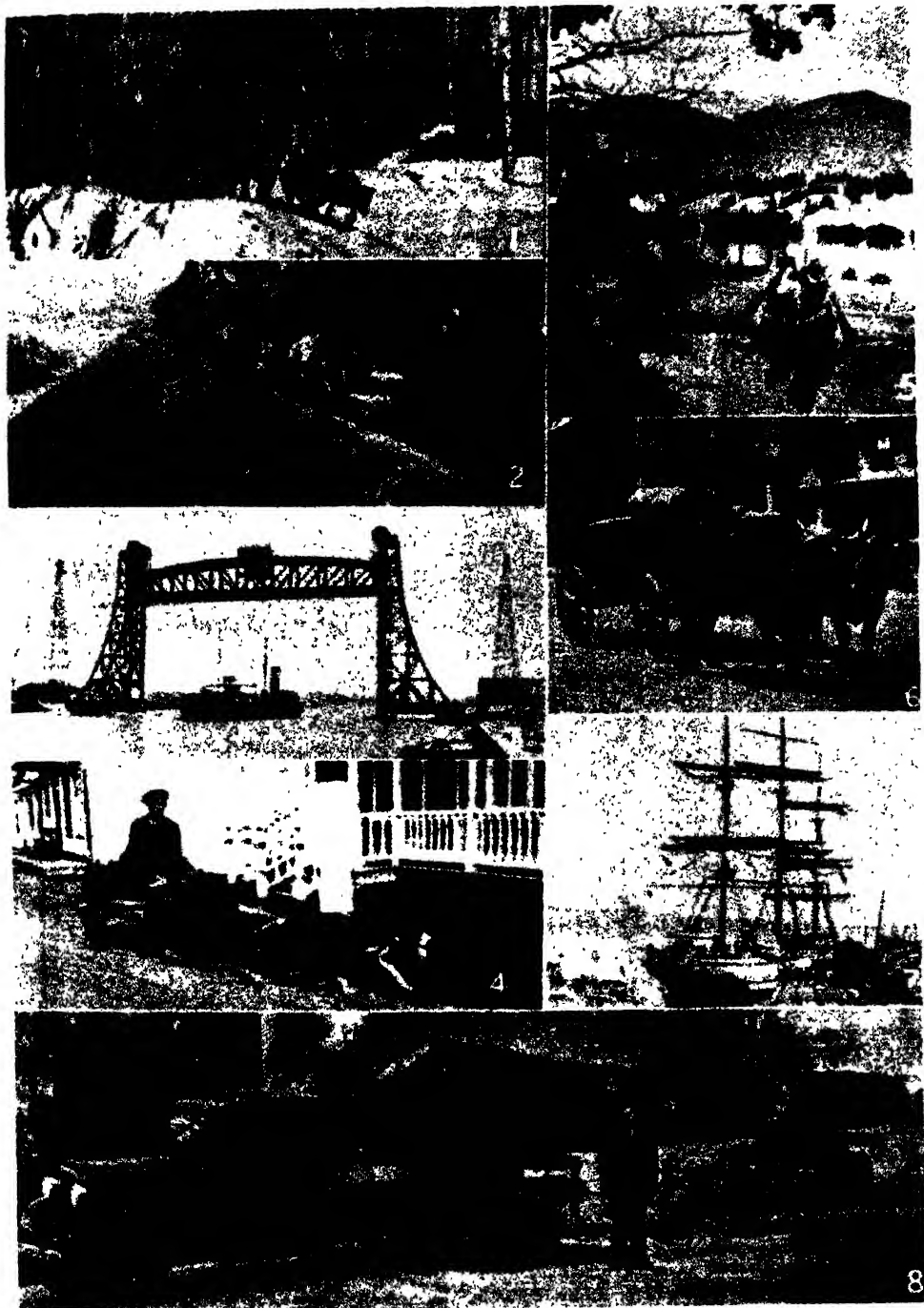
Waterways. Eastern Canada was the first to be settled and, as there were no roads to connect different sections, the settlers used

the waterways to meet their basic requirements for travel and conveyance of goods. In the Maritime Provinces, which were almost insular so far as the rest of the country was concerned, the ocean and its many bays and inlets were the chief routes of trade. In the trading relations of the Maritime areas with New England, the ocean was the great highway of commerce; and in the trade between the different parts of the Maritimes, the Gulf of St. Lawrence, and the Bay of Fundy, with their tributary rivers and basins, were the courses of trade and communication. The early settlements in Ontario and Quebec were established chiefly along the water routes, especially along the St. Lawrence River and the Great Lakes. Others who followed settled along the tributary rivers and connecting chains of lakes. Even in the Prairie Provinces and in British Columbia, the first lands to be taken up were those along the river valleys and adjacent to the lakes.

The early fur traders, with Indian guides and canoes, used these waterways to carry their valuable cargoes from the interior to the ocean ports. As trade became more extensive and larger vessels were used, it became necessary to construct canals to overcome the rapids between the lakes and along the St. Lawrence River. The most important were the Sault Ste Marie Canal, between Lake Superior and Lake Huron, the St. Clair Flats Canal, to obviate the shallows and rapids of the St. Clair River between Lakes Huron and Erie, the Welland Canal (opened in 1829), at the eastern end of Lake Erie, to connect Lakes Erie and Ontario, and thus surmount the Niagara River and its falls; and finally, a series of canals (principally the Lachine, the Soulanges, and the Cornwall Canals) at different points along the St. Lawrence River.

Among recent improvements is the construction of the Welland Ship Canal, 25 miles in length, which overcomes the difference in level between Lakes Erie and Ontario by seven locks of 46½ ft. lift each, and which has a depth of 25 to 27½ ft. Its structures are being built for 30 ft. draught, so that the deeper requirements of the future may be effected by dredging the canal prism and the harbour entrances. The St. Lawrence River channel from Montreal outward has also been deepened to accommodate the largest grain ships.

St. Lawrence Waterway Project. In recent years, since the Welland Ship Canal was undertaken with the object of deepening this inter-lake waterway to 25 ft., there has been much agitation for the deepening of the international section of the St. Lawrence River to provide, along with improvements



COMMUNICATION AND TRANSPORT

1. Dog team in the Red Lake Section. Heavy snows often render other local transport impossible in winter. 2. Tractor transport in British Columbia. 3. The Welland Ship Canal, 25 miles long, which overcomes the difference in level between Lakes Erie and Ontario by means of seven locks. 4. French Canadian dog transport. 5. Barkboat canoes on Lake Windermere. Particularly in Eastern Canada water routes remain basic communications. 6. Bullock cart in Nova Scotia. 7. Schooner at Campbellton, New Brunswick. 8. Motor truck conveying eight tons of timber.

Photos: Canadian Official News Bureau; Canadian Pacific Railway, Photopress

in the purely Canadian section, for a waterway of 25 ft. in depth. A double purpose has been kept in mind in this proposed work, namely, the deepening of the channel for navigation and the development of works along this rapids section for the production of electrical energy both in Ontario and New York State. The International Joint Commission, composed of representatives from the two countries, reported favourably upon this project in 1926, and a Joint Board of Engineers reported upon its feasibility and

portions of the country had a fairly complete network. The system of "road work," under which each farmer had to devote a certain amount of time each year to the improvement of the road which passed his own farm, produced satisfactory roads, and during the last quarter of the century the drainage and the gravelling of the roads made firm foundations and satisfactory surfaces for all the farmers' needs.

With the automobile, new demands have been made, and instead of leaving the responsibility for all the roads upon the farmers, the provincial governments have undertaken the construction of a main network of macadamized and cement roads, leaving to the county councils the responsibility for the lateral connections of these main thoroughfares. It is realized that trade and travel are taking place over much wider areas.

In certain newer and unorganized areas, where roads are necessary to afford sparsely settled districts access to markets, and where these could not be provided satisfactorily by the few settlers, a system of colonization roads has been established by the provincial highways department. The cost is borne largely by the Government. Work for the unemployed has recently been provided on the so-called Trans-Canada Highway.

Highway Transport. Like all other modern countries, Canada has carried out the construction of a substantial mileage of improved roads—macadamized and cement—upon which great numbers of motor trucks and buses, as well as automobiles, are operating. The trucks have taken away from the railways a considerable amount of freight traffic, and the automobiles have depleted the passenger business of the railways. So much chaos reigns as a result of the unregulated motor trucks competing with the elaborately regulated railways, that some decisive change will have to be made soon. The co-ordination of the rail and highway service in Great Britain and in the United States, and the regulation of the motor vehicles in these countries, is an indication of what must inevitably come in the near future in Canada.

Railways. The first railway lines were, like those of England, adjuncts to waterways, for the purpose of tapping additional sources of traffic which could be poured upon the waterways. The first railway was opened in 1836 between St. Johns and La Prairie in Quebec (16 miles), and was intended to shorten the distance between Montreal and New York. In 1847 another line was opened between Montreal and Lachine, and in 1848 a line from Montreal to St. Hyacinthe. In 1850 there were only 66 miles of railway in



ROAD CONSTRUCTION

Unemployed men in Canada have been put to the building of new trunk roads. That shown above is to be 100 miles long through the Rocky Mountains, linking Jasper and Banff National Parks.

Photo: Canadian National Railways

cost in 1927. A treaty was drawn up between the two countries and signed on behalf of the two nations. It was agreed that the Canadian Parliament would not take action upon this treaty until it had been ratified by the United States Senate. There it failed to secure the necessary two-thirds vote.

Highways. As the country became better settled and trading centres came into existence, roads were built to connect the farms with the markets. Local roads constructed by the rural inhabitants led to the filling up of the country, and this in turn made necessary the building of main thoroughfares or "Grand Trunk" roads to the more distant centres of business and government. By the middle of the nineteenth century the settled

Canada. Railway construction was delayed because of lack of capital. In order to encourage the investment of capital, the Government, in 1849, passed an Act by which it undertook to guarantee the interest on the bonds of railway companies whose lines were not less than 70 miles long.

Grand Trunk Railway System. During the decade 1850-1860, British capital began to take an interest in railway construction in Canada. In 1854 the Great Western was opened to connect Hamilton with the Niagara frontier and with London and Detroit. A plan was formed for a line from Halifax to Windsor, Ontario; but since aid was not forthcoming from the British Government, a less ambitious plan was put into effect, and the Grand Trunk Railway between Montreal and Toronto was opened in



BALLASTING A SECTION OF RAILWAY TRACK
Photo: Canadian Government

1856. Its cost of construction was much greater than had been estimated, on account of higher prices for its materials and unforeseen engineering difficulties. Wages, too, were much higher than was expected, due to the great amount of other railway construction which was taking place. Then, when the road began operation, it found keen competition from the parallel waterway. These factors reacted disastrously on the company's financial status, and several times the Government had to come to the rescue.

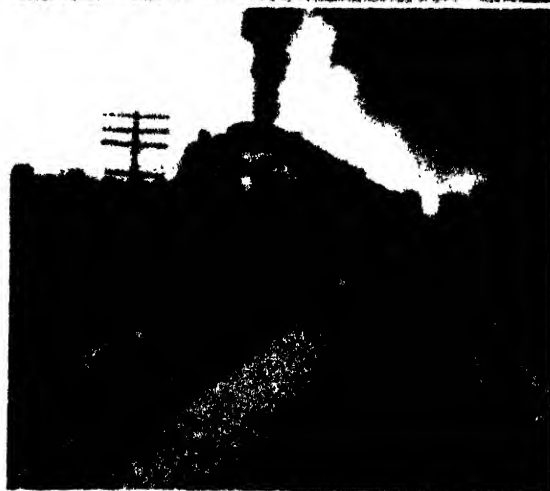
The construction of a number of lines in Quebec and Maine, and the leasing of the Atlantic and St. Lawrence Railway for 999 years, together with the completion of the Victoria Bridge across the St. Lawrence at Montreal in 1859, gave the Grand Trunk a through route from Portland, Maine, to Sarnia, a distance of 800 miles. Other lines were joined with the system in Ontario and Quebec, and in 1880 it had extended its line from Port Huron to Chicago, thus giving it direct connection between the Atlantic and this great business centre of the United States. Later, the company's system was extended by construction, purchase, and lease until it reached nearly all the important traffic-producing communities in Ontario and

Quebec. By 1890 the Grand Trunk had absorbed or controlled seventeen railways in Canada and fifteen more in the United States. Its ventures were far from profitable, but it was not until it embarked on its western extension, the Grand Trunk Pacific, in the early years of the present century, that it collapsed financially.

Intercolonial Railway. This road was built as part of the Confederation agreement, to connect the Maritime areas with the interior. Under the British North America Act, 1867, the Dominion Government agreed to construct this railway within three years. It was to connect the St. Lawrence with the Maritimes, and its termini were finally determined as Moncton, New Brunswick, and Lévis, Quebec. Its route, along the shore of the Gulf of St. Lawrence, rather than the much shorter route near the United States boundary, was chosen for military and political reasons, since Great Britain wanted to reduce as much as possible her expenditures on military protection. The main line of this system was constructed by the Dominion Government, and lines were taken over in the Maritime provinces, giving access to Halifax, Windsor, and Pictou, Nova Scotia, and to Saint John, New Brunswick. The Intercolonial was opened in 1876. Later, other lines in Quebec were merged with it, and in 1898, by getting running rights over the Grand Trunk, it finally obtained access to a western terminus (Montreal) with a large amount of business.

Canadian Pacific Railway. When, in 1871, British Columbia consented to enter Confederation, one of the terms was that a transcontinental railway should be built to connect that western province with the east. The Dominion Government gave its pledge to begin the railway within two years and to complete it in ten years. Efforts were made to have this work undertaken by private capital, but failure in this projected the Government into the work in 1874. Slow progress, however, induced the Government, in 1880, to enter into an agreement with the Canadian Pacific Railway Syndicate for its completion. The Government granted to the Syndicate all the line completed and under construction, a cash subsidy of \$25,000,000 and a land grant of 25,000,000 acres, admission of construction materials free of customs duties, and protection for twenty years against competitive railway building in the West, south of the Canadian Pacific main line. The company agreed to complete the road by 1891, and thereafter to keep it in good operating condition. In reality, it was completed in 1885 and opened in 1886.

During the time of the completion of this



transcontinental railway, the company was engaged in the construction and acquisition of a network of lines in the East. In Ontario, Quebec, New Brunswick, and Nova Scotia the company secured (by construction, leases, and running rights) the necessary connections with all important sources of traffic in these provinces and port connections at Halifax and Saint John.

In the West, in 1897, the company obtained a subsidy of \$11,000 per mile for a railway from Lethbridge, Alberta, to Nelson, British Columbia, through the Crow's Nest Pass. In return therefor it agreed to give reduced rates on certain enumerated commodities, including especially three cents per hundred pounds on grain and flour from its western points to Fort William, Port Arthur, and all points east thereof. This Crow's Nest line was extended farther south into British Columbia and finally tapped the Spokane and Portland traffic. Other lines were built to connect with all the chief traffic centres of the prairie provinces.

Canadian Northern Railway. This railway was due in its inception to the enterprise of William Mackenzie and Donald Mann, who had previously been engaged in contract work on the Canadian Pacific. The influx of immigrants to the Prairie Provinces opened a field for additional railways, and these men, with provincial assistance, were soon engaged in railway construction on their own account, first in Manitoba and then in the provinces farther west. By 1902, this Canadian Northern Railway Company had reached the Lakes at Fort William, and a second outlet had been effected for the increasing grain traffic of the prairies. It had received abundant financial assistance from the four western

ON CANADA'S RAILWAYS

The first railway was opened in 1836; early lines were designed to bring more traffic to the waterways. Now the trunk systems are Canada's most important lines of communication.

1. A Canadian Pacific express in the Rocky mountains.
2. On the Canadian National lines in French Canada.
3. The "International Limited," drawn by a new streamlined locomotive.

Photos: Canadian National Railways; Fox

provinces in the form of bond guarantees and grants of land; and by this means it had been able to push its lines on the prairies and to Vancouver much faster than if the company had had to depend on its own resources.

Had the company been content to serve the western Provinces, it might have remained solvent; but when, in 1903, it began to build eastward from Port Arthur to the port of Montreal, with the object of becoming a second transcontinental line, it undertook a fatal step, which will be noted later.

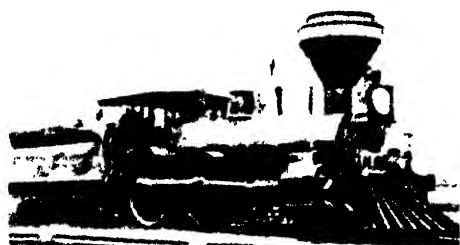
Grand Trunk Pacific Railway. The great development of the Prairie Provinces induced the Grand Trunk, about the end of last century, to look eagerly to entering that territory. It desired a share of this trade, and

construction. But the cost of construction was too high, and the Grand Trunk Pacific refused to abide by the rental agreement.

The Grand Trunk Pacific, likewise, was very extravagant in its construction, and the Government had to provide most of the funds. Moreover, it had few branches or feeders. With heavy fixed charges and inability to meet even its operating expenses, the Grand Trunk Pacific had to receive Government assistance year after year.

Canadian National Railways. In 1916, with such great responsibility for unprofitable railways, the Government appointed a Royal Commission to inquire into this railway problem with the object of determining the best solution. The majority report of the Commission recommended that the Canadian Northern, Grand Trunk, and Grand Trunk Pacific should be taken over by the Government and that there should be formed the Dominion Railway Company to operate them as a unit. To these formerly privately owned roads there should be added the two Government-owned roads (the National Transcontinental and the Intercolonial), and the Dominion Railway Company was to have entire control of the unified management of these five properties. This company was to be administered by a permanent board of five trustees, "non-political and self-perpetuating." But when Parliament was convened in 1917, ostensibly to implement the majority report of the Commission, the Government had a different plan. In that year the Canadian Northern was taken over, and not until two years later (1919) were the Grand Trunk Pacific and Grand Trunk acquired by the Government. These three, along with the two Government-owned roads, were operated under the direct control of the Government.

Because of increasing costs, the Government, in 1931, appointed another Royal Commission to study the situation and make a report. As the Commission stated, the main problem before it was how to secure relief to the country from the heavy burden arising from the Government railways. The Commission found that the chief reasons for these railways' financial distress were: (1) "the red thread of extravagance" running all through the administration, so that the debt of the Canadian National Railways exceeded the net debt of the Government, and the net losses from the system in the years 1919-1935 inclusive amounted to approximately \$1,100,000,000; (2) their embarkation upon unprofitable and extravagant ventures, such as operation of vessels, construction of needless hotels, the operation and acquisition of branch lines and subsidiaries which were unnecessary; (3) the influence of



ENGINE NO. 22 G.W. "NIAGARA"

One of the old wood burners as used on the old Great Western Railway, now part of the Canadian National System

Photo Canadian National Railways

appealed to the Dominion Government in 1902 for a charter for a line from North Bay through Winnipeg and the northern parts of the prairies to the Pacific Coast. At the same time, the Canadian Northern was seeking a charter eastward from Port Arthur to Montreal. The Government endeavoured to bring these two interests together, but failed, and the Canadian Northern began construction from Port Arthur to Montreal. A charter was also given to the Grand Trunk's subsidiary, the Grand Trunk Pacific, to enter the West.

But the Government also had a plan; and an agreement was made with the Grand Trunk Pacific that the Government should build a line (the National Transcontinental Railway) from Winnipeg, through northern Ontario and Quebec to Quebec City, with a bridge across the St. Lawrence there to connect with the Intercolonial Railway; while the Grand Trunk Pacific was to build the line from Winnipeg to the Pacific Coast. When the Grand Trunk Pacific was ready for operation, it was to take over the operation of the National Transcontinental, free of rental for the first seven years and thereafter at a rental equal to 3 per cent of the cost of

political and community pressure due to direct Government control; (4) the intense competition of the publicly and the privately owned railways; (5) the competition of road motor services; and (6) the prevailing depression which has affected all interests.

The Royal Commission proposed, as its chief remedies, that the highway carriers should be subjected to regulation, that a large amount of unnecessary duplicate mileage should be abandoned, and that the two railway systems should be required by statute to co-operate for the elimination of waste, while at the same time being engaged in competition.

To give effect to this report, an Act of Parliament was passed in 1932, and the new system was made effective at the beginning of 1933. The provisions of the Act were not in full accord with the Commission's reports. The results of the proposed system of competitive co-operation were virtually *nil*, and after the change of administrations in 1935 the board of trustees were notified that the Government intended to establish a more immediate control over the Canadian National Railways.

Air Transport. At the present time, the air service in Canada is concerned largely with the carriage of mail, passenger service, surveying, forest patrol, crop dusting, photography, and the movement of express and freight, in Northern Canada. That part of the country will probably absorb the larger part of air expansion for some time to come. See also AVIATION, page 4733.

CONFEDERATION. The union of the colonies of British North America as the Dominion of Canada was brought about by the British North America Act in 1867. Like most things of the kind, it was the result of many years' agitation and discussion which culminated in the conferences in Charlottetown in 1864 and in Quebec the same year. The original provinces in the Confederation were Canada, New Brunswick, and Nova Scotia. Manitoba was created a province in 1870, British Columbia in 1871, Prince Edward Island in 1873, and Alberta and Saskatchewan in 1905. The northern parts of the Dominion consist of the districts of Mackenzie, Keewatin, and Franklin, constituting the North-West Territories and the Yukon.

CONNAUGHT. ARTHUR WILLIAM PATRICK ALBERT, Duke of. See article, Vol. II.

COOK, JAMES (1728-1779). The British explorer surveyed the St. Lawrence River and Newfoundland coast. He served in Canada during the siege of Quebec in 1759 and in 1776-8 explored the north-western coast of North America. See also article, Vol. II.

COPPERMINE RIVER. A river of the North West Territories that rises near longitude 110° and, after a course of 525 miles, empties into Coronation Gulf, on the Arctic coast. It was discovered by Samuel Hearne, in 1771, and afterwards visited by Sir John Franklin in 1821, and by Sir John Richardson in 1848.

CORNWALLIS, EDWARD (1713-1776). Statesman, born in England. He was appointed Governor of Nova Scotia in 1749, and the same year founded Halifax. After his return to England, he was elected to the House of Commons.

COURCELLE, DANIEL DE REMY, SIEUR DE (d. 1698). Statesman, born in France. He was sent to Canada as Governor in 1665, and returned to France in 1672. He was a judicious and capable administrator.

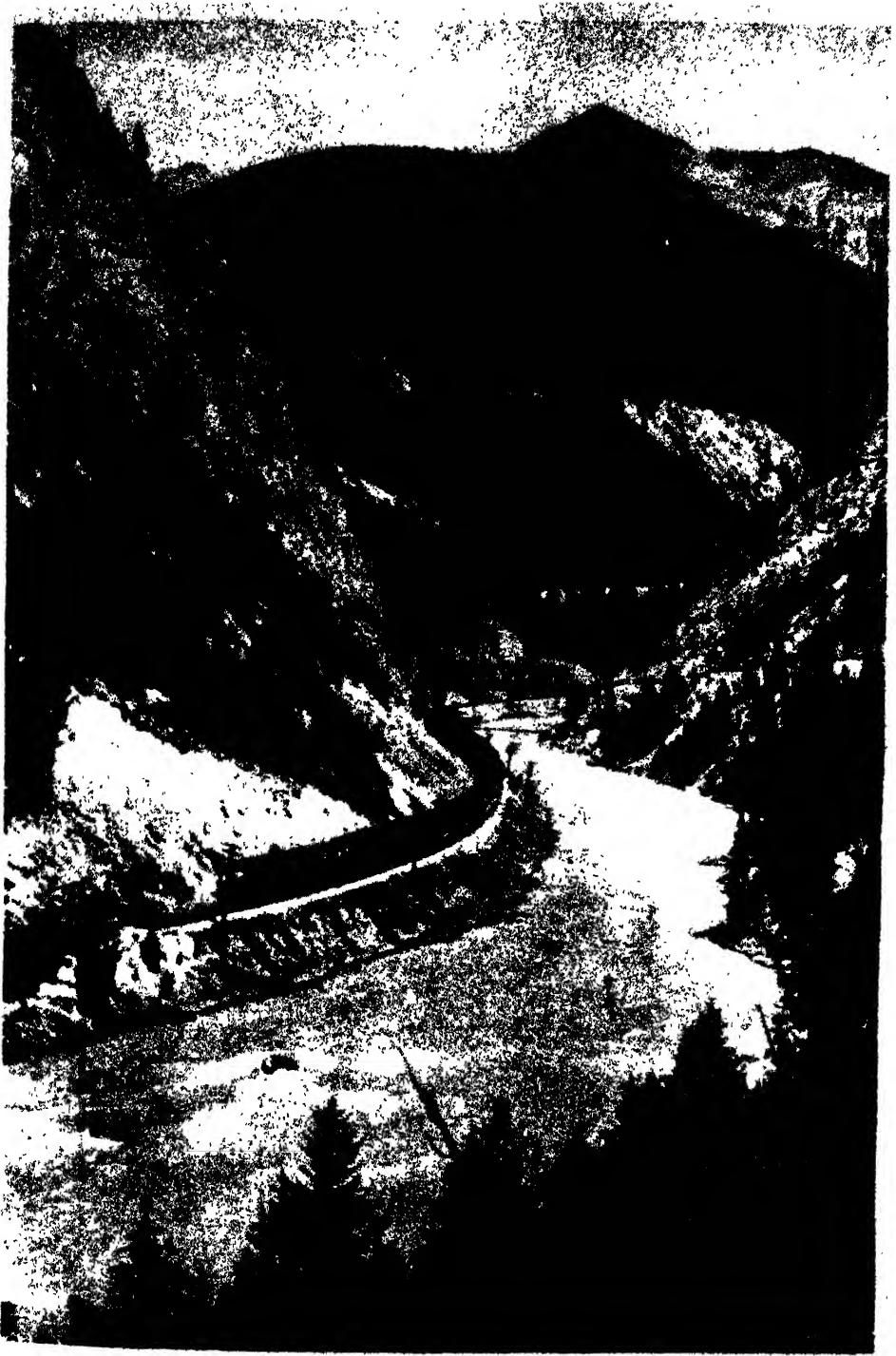
CRAWFORD, ISABELLA VALANCY (1850-1887). A Canadian poet, she was born in Dublin, and brought to Canada in 1858. During her lifetime she published a volume of unusually fine verse, under the impossible title *Old Spookses' Pass, Malcolm's Katie and Other Poems*. After her death her *Collected Poems* were published.

CREMAZIE, JOSEPH OCTAVE (1827-1879). Poet, born in Quebec. He was a bookseller, and devoted all his spare time to the writing of verse in the French language, but with a spirit truly Canadian. Business reverses in 1862 induced him to move to Paris, where he composed a work describing his own experiences during the Siege of Paris, 1870. After his death his poetical works were gathered together and published as *Œuvres complètes*.

CUNARD, SIR SAMUEL (1787-1865). Steamship executive, born in Halifax, Nova Scotia. Deeply interested in the first attempts to cross the Atlantic by steam, he devoted his great energies to the establishment of a line of steamers between England and America. He finally secured the support of several big shipping firms in England, was given the mail contract by the British Government, and organized the Cunard Company. The first voyage of a Cunard vessel was made in 1840, when the *Britannia*, a wooden paddlewheel steamer, crossed from Liverpool to Boston in fourteen days eight hours.

CURRIE, SIR ARTHUR WILLIAM. See article, Vol. II.

DABLO, CLAUDE (1619-1697). Jesuit missionary, born at Dieppe, France. He was sent to the Americas in 1655, and worked for three years among the Onondaga Indians in New York. In 1661 he was sent on a mission to the Crees around Hudson Bay. He was one of the founders of the Mission at Sault Ste Marie, and in 1670 he was made Superior of Canadian Jesuit Missions.



TRAIN IN KICKING HORSE PASS IN THE ROCKY MOUNTAINS

Photo: Canadian National Railways

DAFOE, JOHN W. (born 1866) Journalist. Born in Combermere, Ontario. Engaged in



JOHN W. DAFOE
Photo Topical

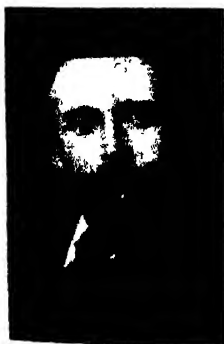
newspaper work since 1882, he has been editor-in-chief of the *Manitoba Free Press* since 1901. He is to-day the most distinguished Canadian journalist, and has been offered, and refused, such important public offices as Canadian Minister to the United States.

DALHOUSIE, GEORGE RAMSAY, NINTH EARL OF (1770-1838). Bri-

tish soldier and statesman. Born in Scotland, he saw military service in many parts of the world, including Waterloo. He was appointed Governor of Nova Scotia in 1816, and three years later became Governor-General of Canada. He was too much of a soldier to be a successful statesman. His relations with the French Canadians became so strained that in 1828 he was recalled. He was Commander-in-Chief in India from 1829 to 1832.

DAWSON. A city in the district of Yukon, on the Yukon River, once the centre of an extremely busy gold-mining camp. Its connection with the outside world is by steamer to Whitehorse and by railway to Skagway. Population, 819 (1931).

DAWSON, GEORGE MERCEUR (1849-1901) Geologist, son of Sir John W. Dawson. He



DR G. M. DAWSON
Photo Department of Mines

studied geology and palaeontology under Huxley and Ramsay. He was geologist and botanist to the North American Boundary Commission, 1873-1875. After serving on the staff of the Canadian Geological Survey, he became director in 1895. He carried out many important explorations in western Canada.

DAWSON, SIR JOHN WILLIAM (1820-1899). Geologist and educator, born at Pictou, Nova Scotia. He became superintendent of education of his native province in 1850. From 1855 to 1893 he was principal of McGill University, which he built up into

one of the most important seats of learning in the country. He was the first president of the Royal Society of Canada and a geologist of world-wide fame. His works include *Acadian Geology*, *The Story of the Earth and Man*, *Nature and the Bible*, and *Fossil Men*.

DE MILLE, JAMES (1836-1880). Novelist. Born in St. John, New Brunswick. He became Professor of Classics at Acadia College and from 1865 to his death was Professor of English and Rhetoric at Dalhousie College, Halifax. See LITERATURE, Vol. IX, page 4774.

DENONVILLE, JACQUES RENE DE BRISAY, MARQUIS DE (d. 1710). Soldier and statesman, a capable military officer who succeeded La Barre as Governor of Canada in 1685 and served until 1689. He led an expedition against the Iroquois in 1687 and defeated and burned the villages of the Senecas. He built a fort at Niagara.

DE TROYES, CHEVALIER PILRRE (d. 1688). French soldier. He went to Canada with the Carignan regiment and commanded an expedition in 1686 against the Hudson's Bay Company forts on Hudson Bay. He captured Moose Factory, Fort Rupert, and Fort Albany.

DORCHESTER, GUY CARLETON, FIRST BARON (1724-1808). Statesman, born in Ireland. He accompanied Wolfe to Canada in 1759 as Quartermaster-General and returned in 1766 as Lieutenant-Governor of Canada. Two years later as Governor-General, he had much to do with drafting the Quebec Act. He successfully defended Quebec from Montgomery in 1775-1776. He returned to England in 1778, and was sent out in 1782 as Commander-in-Chief at New York, where he was occupied in evacuating the Loyalists. He returned to Canada again as Governor-General in 1786, and helped to settle the many practical problems arising in such a mixed community. He went back to England in 1796.

DORION, SIR ANTOINE AIME (1818-1891). Statesman, born in Lower Canada. He represented Montreal in the Legislature of Lower Canada from 1854 to 1861. He formed an Administration with George Brown in 1858, was Provincial Secretary in 1862, Attorney-General in 1863, Minister of Justice in the Dominion Government 1873-1874; and Chief Justice of the Court of Queen's Bench, Quebec from 1874 to 1891.

DOUGHTY, SIR ARTHUR GEORGE (1860-1936). Historian, born in England. He came to Canada and became joint librarian of the legislative library at Quebec. Appointed Dominion Archivist, 1904, he has been mainly instrumental in building up the magnificent collection of original documents, pictures, and other historical material in the Public Archives of Canada. He

wrote *The Siege of Quebec, Cradle of New France, Fortress of Quebec, The Acadian Exiles*, and many other historical works.

DOUGLAS, SIR JAMES (1803-1877). British colonial administrator, born in British Guiana. He came to Canada in 1820 and joined the North West Company and continued with the Hudson's Bay Company after the union in 1821; served under John McLoughlin on the Pacific coast; carried on negotiations on behalf of the Company with the Russians in the north and with the Mexicans in California, and built a trading post on San Francisco bay. He became governor of Vancouver Island in 1851. In 1858 he left the Company and was appointed governor of the colony of British Columbia.

DRAPER, WILLIAM HENRY (1801-1877). Statesman, born in England. He settled in Canada in 1820, was elected to the Upper Canada Assembly in 1836, and became a member of the Executive Council in the same year. He was appointed Solicitor-General in 1837 and Attorney-General in 1840.

A man of unusual ability, Draper took a deep interest in the promotion of higher education and the improvement of municipal institutions. He afterward became a judge of the Court of Queen's Bench for Upper Canada and in 1863 he was appointed Chief Justice.

DRUMMOND, WILLIAM HENRY (1854-1907). Physician and poet, born in Ireland. He was brought to Canada as a boy of 10, studied medicine, and practised for many years. Much of his work was among the French-Canadian *habitants*, or country folk, whose shrewd common sense, simplicity, and unconscious humour he embodied in verse written in their own curious form of broken English.

His books include *The Habitant, Philo-Rum's Canoe, Johnnie Courteau, The Voyageur*, and *The Great Fight*.

DUFF, SIR LYMAN POORE (born 1865). Jurist. Born in Meaford, Ontario. He was called to the bar of Ontario in 1893; became a judge of the Supreme Court of Canada in 1906 and Chief Justice of Canada in 1933.

DUFFERIN AND AVA, FREDERICK TEM-

PLE BLACKWOOD, MARQUESS OF. See article, Vol. III.

DUNSMUIR, JAMES (1851-1920). Son of Robert Dunsmuir, he was Prime Minister of British Columbia from 1900 to 1902, and Lieutenant-Governor from 1906 to 1909.

DUNSMUIR, ROBERT (1825-1889). Coal mining executive. Born in Scotland, he emigrated to British Columbia, where he used his knowledge of coal mining in developing rich veins on Vancouver Island. In 1882 he was elected to the Legislative Assembly, and in 1886, became President of the Council.

DURHAM, JOHN GEORGE LAMPTON, EARL OF. See article, Vol. III.

EASTERN TOWNSHIPS. Part of the province of Quebec lying along its southern boundary. Many of the early settlers came from Vermont, but the English-speaking element has been gradually superseded by French Canadians.

EATON, TIMOTHY (1834-1907). Merchant. Born in Antrim, Ireland, he emigrated to Canada. He engaged in business in Toronto and established the firm that has since developed into one of the largest department stores on the continent. He and his son, Sir John Craig Eaton (1876-1922), made generous use of their wealth in public benefactions.

EDMONTON. See article, Vol. III.

EDUCATION AND SCHOOLS. Education engages more people than does any single industry in Canada. Twenty-five per cent of the total population of the Dominion is enrolled annually in some form of educational establishment; and one person out of six is at school every day of the school year.

Teachers and other educational officials number at least 75,000. The costs of education cannot be expressed in figures, but the expenditure is about \$150,000,000 annually.

In England, education was financed by the Church or by private benefactions. But in Canada, after the conquest, there was no State Church and the country was too young and too poor for much assistance to be expected from private individuals. Hence, the demand for State support, which, particularly in Upper Canada, became merged in the general cry for reform. The reformers



WILLIAM HENRY
DRUMMOND



TIMOTHY EATON
Photo: Topical

won. But the provinces, while assuming responsibility for education and giving grants in aid, left the main financial burden upon the shoulders of the local boards and gradually fixed it there, first by authorizing local assessment, then by making the government grants conditional upon it, and finally by making it compulsory. At present, compulsory local assessment is universal throughout Canada.

Systems of Education. Officially, there are many systems of education in Canada, due to the political history of the country. Each of the older provinces was once an independent colony of the mother country, with its own government. Geographical



INDIAN DAY SCHOOL
Graduating class (1935) at the Caughnawaga
Reserve School, Quebec.

nearness, in the absence of good roads, railways, telegraph, and an adequate postal service, did not count for much. Education was a strictly provincial affair.

At Confederation (1867), when administrative matters were divided between the Federal and the provincial governments, education was allotted to the provinces. Each province had already evolved a more or less rudimentary system; and Quebec, the keystone of the proposed political union, was determined to keep full control of its own educational policy. When other provinces joined the union, or were created within it, control of education remained with them.

Thus there are separate systems of education for each province; and each has been theoretically free to develop as it chose. Eight of the nine provincial systems are remarkably similar in character, aims, curriculum, and teacher training, as well as in mechanical structure and form of administration. The exception is Quebec.

A somewhat mechanical system of education, originating in the United States, was

introduced into United Canada (Ontario and Quebec) and the Maritimes. It proved readily adaptable to the pioneer conditions then existing; and as those conditions were similar in all four provinces, the system developed in each along much the same lines. Upon this were grafted certain ideas derived from Prussia. In its fully developed form it was adopted by the newer Western provinces, most of whose administrators and educators were originally from the East. Thus the "grade-year" system of school organization spread throughout Canada, excepting in Quebec.

Scottish Ungraded Schools. Different in origin from the "grade-year" school, and opposed to it in principle, was the ungraded parish school, introduced into the Maritimes by settlers from Scotland. Well-adapted to poor and sparsely populated districts, this type of school became a distinctive feature in the educational systems of the Maritime Provinces; and, with certain modifications, has found a place in the pioneer areas of western Canada.

Effects of Intercommunication. Improved means of communication in recent years have drawn the provinces closer together. Interchange of ideas has become easy and consequently frequent. Nation-wide educational organizations such as the National Council of Education, the Canadian Education Association, and the Canadian Teachers' Federation, make the problems and experiments of the different provinces common property. Thus changes themselves, whether in organization, method, or content, tend to be uniform. Again, the larger universities have always been more than provincial; and the interrelation between themselves and between them and the provided schools tends towards uniformity in the systems of the latter.

Control of Education. The Federal Government exercises no direct control over provincial education. Indirectly, it may influence by money grants for certain purposes and under certain conditions. These it has given, for technical and agricultural development and for research work in universities.

Indian Schools. The Federal Government is solely responsible for the education of the Indians, except the few thousands who are full citizens. The majority (over 100,000) are on reservations. On or near these reservations, the Dominion has established schools, and others are maintained with Government assistance by various religious denominations. Experience has shown that the best type is the boarding school, and the best kind of curriculum one which is largely of a vocational nature. In 1933, 17,500 pupils were enrolled, of whom nearly

2000 were in grade eight or higher. Where there are no Federal schools, the Indian children attend the regular public schools of the province, at the charge of the Federal Government.

Other Federal Activities. The Dominion Government is also responsible for the education of the sparse white population of Yukon district and the unorganized territories of the North. The Royal Military College, at Kingston, Ontario, is under Federal jurisdiction. These activities, together with the collection and dissemination of educational statistics, and the support of certain auxiliary school activities, such as Cadet Corps, constitute the entire contribution of the Federal Government toward the education of the youth of Canada.

Central Provincial Control and Administration. In all of the provinces there is a central control of both elementary and secondary education; and in all, except Quebec, it is vested in the government. In all provinces, except Quebec, elementary education is free.

Local Control. For purposes of local administration, the provinces are divided into school districts (called sections in Nova Scotia and Ontario), each with its board of trustees or commissioners elected by the ratepayers.

The powers of this board have been much curtailed by encroachment of the central authority, but they are still large. In general, the board fixes, and frequently assesses and collects, the amount of money to be raised for school purposes. It has full charge of the school plant. It also, with small restriction, engages and dismisses the teacher at its pleasure; and, under a minimum limitation, fixes his salary.

In general, the money raised locally for school purposes far exceeds that granted by the provincial government, the proportion for all Canada being about 80 to 20. The province's expenditure on all forms of education is, on the average, about 12 per cent of its total annual expenditure.

In Manitoba and Alberta, and to a lesser extent in other provinces, schools are being consolidated. One central school serves the educational needs of several districts, provision being made for the transportation of the pupils. This method is especially serviceable in securing adequate high-school facilities for rural districts. These schools tend in some cases to become boarding schools, and in other respects to approach more nearly to English than United States models. In one case in Alberta, sixty-seven school districts covering 2000 sq. miles, have one consolidated school, which provides dormitories for the pupils from Monday to Friday.

Attendance. The minimum age for free admission to school is five years in Nova Scotia, Quebec, Ontario, and Saskatchewan; elsewhere it is six. The school year averages about two hundred days. The long vacation is usually in summer. In some rural districts it is in winter on account of economic or climatic conditions.

All of the provinces except Quebec have compulsory attendance laws, but they are not equally enforced. The provisions of the laws vary in the different provinces, but in general they apply to children between the ages of 7 and 14, with a tendency to extend the upper age limit, particularly in urban



A PRAIRIE SCHOOL

Pupils ride to and from the school house each day

Photo: Canadian Pacific Railway

centres. Official statistics indicate a somewhat slow but steady improvement in school enrolment during the past thirty years.

Central Administration. The executive head of educational administration in the provinces, under the Provincial Minister in charge of Education, is a permanent official, called Deputy Minister of Education in Ontario and in the Prairie Provinces, and Superintendent of Education in the others. In Quebec, most of the superintendent's administrative duties are divided between a French secretary and an English secretary. They are the actual administrative heads of the Roman Catholic and Protestant schools, respectively. The superintendent is responsible to the government (in Quebec, to the Council of Education) for the activities of all provided schools, including normal schools and technical and vocational schools (except in New Brunswick).

Under the superintendent of education is a staff of executive officials. With so much power in local boards, the most important of these are the ordinary inspectors of schools. They are the superintendent's field officers; and upon them largely depends the progress of the schools, particularly in rural districts.

Quebec's Separate Schools. In Quebec the inhabitants are chiefly French, who have inherited and, through the medium of the Church, carefully preserved, the educational ideals and policy of seventeenth-century France, where education was within the province of the Church. The Roman Catholic Church in Canada, true to its tradition, has always demanded complete control of its schools. Preservation and cultivation of the French language has been of much help toward this end. Hence, in Quebec, and wherever in Canada the Roman Catholic-French system of education obtains, it stands apart from school systems based upon other traditions.

The Quebec Council of Education is divided into two committees—Catholic and Protestant—each of which has full control of its own schools. The link between the two committees is the superintendent of education. All the members of the Protestant committee, and about half of those of the Catholic committee, are appointed by the provincial government. The other half of the Catholic committee is composed of ecclesiastical dignitaries. The Protestant schools (about 700 in number) are administered much the same as are those of the other provinces. The Catholic schools (about 8000 in number) are virtually under the direction of the Roman Catholic Church.

Separate schools are almost universal in Quebec, where they work well alongside each other. Legal provision is also made for them in Ontario, Saskatchewan, and Alberta. In the other five provinces all public schools are non-denominational; but in some larger centres schools attended mainly by Catholics have certain local privileges which make them virtually separate schools.

In Quebec fees are charged for children from 7 years of age upward, although no child unable to pay is denied admission to school. Secondary education, again excepting Quebec, is also generally free; though in the western provinces fees are sometimes charged.

Universities. The six provinces which have State universities are New Brunswick, Ontario, Manitoba, Saskatchewan, Alberta, and British Columbia. The remaining universities and the majority of the colleges are independent of government control. See later section on "Universities and Colleges."

Private Schools. The number of private schools in Canada is comparatively small, their enrolment (1933) being 66,500 as compared with 2,232,000 for provincially controlled schools.

Curricula and Special Types of Schools. In earlier days there was little attempt to

relate the work of the school to outside life; and instruction in such cultural subjects as music and art was even more neglected than it is, in general, except in the larger centres, at the present day.

A marked change, only now in process of development, has been in the endeavour to relate the school to the general life of the community. This may be seen in the rise of such organizations as Parent-teacher associations; in the school activities of Women's Institutes, Daughters of the Empire, and other groups; and, within the school itself, or composed of its pupils, in the Junior Red Cross, Boy Scouts, and Girl Guides.

Elementary Schools. Since the beginning of this century there has been a great change in the elementary school, manifested in many ways, such as methods of instruction, contents of textbooks, and the introduction of "busy work" in the primary grades, and of manual training and household science in the higher grades.

High Schools. Any fundamental change in the high school is less marked. The traditional pull of the university has hitherto been strong. But an opposite pull of steadily increasing strength has developed of late years under the increasing need of better provision for vocational training. Attempts to meet this need by broadening the curriculum of the ordinary type of secondary school have proved inadequate and to some extent unsatisfactory. A different method of approach to the problem is necessary.

In the course of the development of the school system, three special major problems have arisen: (1) that of separate schools, already mentioned; (2) the Canadianization of the large body of foreign immigrants in the West, to be mentioned later; and (3) the most recent and perhaps the most vital, the adjustment of the high school to meet present-day conditions. Hitherto, educational authorities have been engrossed in providing for the bare elementary needs of a pioneer country. Thus they have achieved. The pioneer phase is passing away, and opportunity is now given to attack seriously the secondary school problem.

Junior High Schools. A noteworthy indication of a growing conviction that the secondary school must be brought into closer relation with daily life is the recent establishment in several provinces of junior high schools, consisting of grades seven to nine. Their object is twofold, to afford an opportunity of adjusting the atmosphere of the school to pupils in the adolescent stage; and to furnish a rounding-off course for students not intending to proceed farther—a course adapted to their needs in

the community where they will make their living.

Bilingual Schools. In several provinces, where certain districts are settled almost entirely by French-speakers, bilingual schools are in operation. In general, instruction in these schools is given in the French language in the first or first two grades, and after that, in English; though French is also taught throughout the course. Special inspectors are required to see that a good standard of English is attained.

Vocational Education. Schools for vocational training were among the earliest in Canada. Bishop Laval founded an agricultural school near Quebec about 1668. Soon afterward a trades school was established at Montreal.

Until the middle of the nineteenth century the need of special training in occupations was not felt in Canada. But the development of modern farming methods in the country, and the demand for competent clerical help in the towns, led to the establishment of schools of agriculture and of commercial courses in the ordinary high schools.

It was only at the turn of the century that the rapid growth of industry pressed upon the attention of educational authorities the need of more adequate provision for the vocational training of young prospective employees. Many of the universities opened departments of engineering; at least one province founded a technical college; and all of them, particularly Ontario, established vocational and semi-vocational schools in their industrial centres, alongside the ordinary high schools.

In 1933 there were over 65,000 full-time day students enrolled in the vocational schools of the Dominion, including those in household science, fine arts, and commercial subjects. This number omits those taking commercial subjects in the regular high schools. It also excludes all those enrolled in the Catholic "primary" schools of Quebec, the curriculum of which, in the higher classes is largely of a vocational nature.

Adult Education. There are two general types of evening classes: (1) those providing general instruction for young men and women whose education has been neglected; and (2) those offering courses in technical subjects. In 1933 there were some 250 centres, with an enrolment of over 65,000.

Correspondence courses are conducted in six provinces, Nova Scotia, Ontario, and the four western provinces. They are designed for (1) adults, in technical subjects; (2) children unable to attend a regular day school; and (3) teachers, studying privately to improve their academic standing.

A large proportion of the foreign immigrants in the prairie provinces have had little or no educational background, and they have little understanding of the laws and social customs. The successful solution of the problem of educating these people is perhaps the chief triumph of the West.

Schools and Institutions for Handicapped

Children. Nova Scotia, Quebec, Ontario, Manitoba, Saskatchewan, and British Columbia have special institutions for the blind and the deaf. The other provinces make financial arrangements with these six provinces for the care of children thus afflicted.

In general, except in Ontario, special provision for mentally retarded children is inadequate. In all Canada there are only five institutions entirely devoted to the purpose. Special departments in the regular day schools, even in urban centres, are the exception.

Every province except Prince Edward Island has one or more reformatories which house handicapped children and provide education for them.

Teacher Training. In all the provinces of the Dominion there is a tendency to require distinct types of professional training for the teachers of secondary and elementary schools. There is an endeavour to weed out the untrained teacher. In general, the academic requirements have also been raised. In almost all the provinces, a university degree is required for the higher



ENGINEERING BUILDING, MCGILL UNIVERSITY, MONTREAL
Photo: Canadian National Railways



THE MAIN BUILDING OF TORONTO UNIVERSITY

Photo Canadian Official News Bureau

licences. In Roman Catholic Quebec, stress is put rather upon an extension of the professional training.

Several of the provinces make provision for the training of teachers for special types of schools, such as kindergarten, manual training, household science, and vocational (including agricultural) schools. Every province has one or more teacher-training schools; and in every one, except Prince Edward Island and Manitoba, one or more of the universities has a department of education.

Universities and College. Canada owes her early and ample provision for higher education to the Church of England, which founded the first British overseas university at Windsor, Nova Scotia, an example later followed by other denominations.

There are at present 21 universities in the Dominion: 8 in the Maritimes, 4 in Quebec, 5 in Ontario, and 1 in each of the four Western Provinces.

Taking everything into consideration, the University of Toronto ranks first among the institutions of higher education in Canada. The University of Toronto and McGill University have excellent postgraduate departments. Laval University at Quebec is the most venerable of Canadian colleges, dating back to 1668. The University of Montreal, which shares with Laval the responsibility of higher education in French Canada, is a younger, larger, and more aggressive institution. Queen's University at Kingston, the University of Western Ontario at London, Dalhousie University at Halifax, Acadia University at Wolfville, McMaster University at Hamilton, and the

four provincial universities at Winnipeg, Saskatoon, Edmonton, and Vancouver, probably rank next in importance. The University of New Brunswick, although small, has always enjoyed a high reputation. The University of Ottawa is the most important Roman Catholic college outside the province of Quebec. King's College, incorporated in 1789, formerly at Windsor, N.S., is now affiliated with Dalhousie University. Trinity College and Victoria College are now federated with the University of Toronto.

It is impossible to state accurately the number of colleges in Canada. Many differ from the better secondary schools only in name. Others like University College, Toronto, form an integral part of a university, or are federated or affiliated with it. Of 86 colleges, 45 are solely arts and 27 theological. There are 5 agricultural colleges: 1 in Nova Scotia, 3 in Quebec, and 1 in Ontario. (See AGRICULTURE AND FARMING, page 4703.) Nova Scotia has a technical, Quebec a commercial, and Ontario an art, college. Unless normal schools be called such, there is no college of education in Canada.

ELLESMERE ISLAND. The northernmost of the great islands in the Arctic Archipelago. Its area is approximately 75,000 sq. miles. It was named after the first Earl of Ellesmere, who was president of the Royal Geographical Society in 1854-1855. A party of English explorers and scientists sent by Oxford University spent part of 1935 there.

ENGLISH RIVER. See CHURCHILL RIVER, Vol. IX, page 4742.

EVANS, JAMES (1801-1846). Methodist missionary, born in England. After emigrating to Canada, he entered the Methodist



MONTREAL CITY FROM MOUNT ROYAL

Photo: Canadian Official News Bureau

ministry about 1828. In 1840 he was put in charge of missionary work in the Canadian Northwest, with headquarters at Norway House at the northern end of Lake Winnipeg. He invented a system of syllabic characters by means of which Indians could be taught to read with unusual facility. His system has since been applied to the languages of many of the western tribes as well as to those of the Eskimos.

FALCONBRIDGE, SIR WILLIAM GLENHOLME (1846-1920). Jurist, born at Drummondville, Ontario. He was called to the bar in 1871; appointed a judge of the Court of Queen's Bench in Ontario in 1887; and became Chief Justice of Ontario in 1900.

FAMILY COMPACT. The name applied to a group of Tory leaders in Upper Canada, including Bishop Strachan, Sir Allan MacNab, Sir John Christopher Robinson, William Jarvis, and others. They resisted the attempts of the Reformers to bring about representative government. Themselves men of high principles, who did much to improve conditions in the colony, they might, perhaps, be compared in their attitude toward the public problems of the day to the "Die-Hards" of the Conservative party in England.

FENIAN RAIDS. Early in 1866 the American branch of the Fenian brotherhood planned an invasion of Canada. The New Brunswick border was threatened in April. Late in May a party under O'Neil crossed from Buffalo to Fort Erie and advanced to Ridgeway, where they were repulsed. In 1870 the same O'Neil led his followers into Quebec, but was driven back. In 1871 he made a similar attempt in the west, but a detachment of United States troops from Fort Pembina arrested him and dispersed his followers.

FERGUSON, GEORGE HOWARD (born 1870). Statesman, born at Kemptville,

Ontario. He practised law and entered public life in 1905. In 1914 he became a member of the Ontario cabinet, and was Prime Minister of Ontario, 1923-1931. He was appointed High Commissioner for Canada in England in 1931, and resigned in 1935.

FERLAND, JEAN BAPTISTE ANTOINE (1805-1865). Priest and historian, and for some years a member of the faculty of Laval University, Quebec. He wrote *Cours d'Histoire du Canada, La Gaspésie*, and other works.

FLAVELLE, SIR JOSEPH (born 1858). Merchant and banker, born in Peterborough, Ontario. An outstanding figure in the business life of Canada, he was Chairman of the Imperial Munitions Board during the World War; Chairman of the Board of the Grand Trunk Railway, 1920-1921. He has taken a deep interest in the Red Cross Society and the Victorian Order of Nurses.

FLEMING, SIR SANDFORD (1827-1915). Engineer and publicist, born in Scotland. He entered Canada in 1845. He carried out the surveys



HON. G. H. FERGUSON

Photo: Topical

SANDFORD FLEMING

for the Intercolonial Railway and the Canadian Pacific Railway, between 1864 and 1880. He was closely associated with Strathcona and Mount Stephen. He was mainly responsible for the adoption of the system of cosmic time, and of an inter-imperial cable service and was an untiring advocate of world peace. He wrote *The Intercolonial and England and Canada*.

FORT WILLIAM. A city of Ontario, at the mouth of the Kaministiquia River, on the western shore of Lake Superior. Formerly a trading post of the North West Company, established in 1801. It was for many years the Company's Headquarters, where the annual meetings were held, as described by Washington Irving.

Fort William is now, together with the neighbouring town of Port Arthur, a shipping point for western grain by way of the Great Lakes. In Fort William alone the grain elevators have a capacity exceeding 40,000,000 bushels. Industrial establishments include flour mills, stove and car-wheel foundries, breweries, shipbuilding yards, factories for making building supplies, and plants for heavy iron and steel implements and paper.

FRASER, SIMON (1776-1862). Explorer and fur trader. Born at Bennington, in New York State, he was taken to Canada as a child. In 1792 he joined the North West Company and ten years later became a partner. In 1805 he was in charge of the fur trade in what is now northern British Columbia. In 1808 he descended almost to the mouth of the tumultuous river that was afterward named after him.

FRASER RIVER. A British Columbia



FRASER RIVER, NEAR LYTTON, BRITISH COLUMBIA
Photo: Canadian National Railways

river that rises in the Rocky Mountains and empties into the Strait of Georgia. Its upper waters were discovered by Alexander Mac-

kenzie in 1793; and it was first explored, down to its mouth, by Simon Fraser in 1808. Its total length is 695 miles. Its principal tributaries are the Nechaco, Stuart, Thompson, and Chilcotin. Vancouver, the principal city of British Columbia, stands near its mouth.

FRECHETTE, LOUIS HONORE (1839-1908).

Poet, born at Lévis, Quebec Province.

A journalist, he also sat in the House of Commons from 1878 to 1882. Besides several volumes of prose, he is the author of *Mes loisirs*, *La voix d'un exilé*, *Pêle-mêle*, *Les oiseaux de neige*, *Les fleurs boréales*, *La légende d'un peuple*, and *Les feuilles volantes*.

A collected edition of his verse in three volumes was published after his death. See also LITERATURE, page 4774.

FREDERICTON. See article, Vol. III.

FRONTIER COLLEGE. An experiment in education in Canada. It was organized about the beginning of the present century, and has had over 900 graduates and undergraduates of Canadian and American universities as voluntary instructors at more than 600 frontier stations in Canada, including lumber camps, mining camps, railway construction gangs, manufactories, and camps for the unemployed. More than 100,000 workers have been helped in this way to improve their minds and fit themselves for better work.

FULFORD, FRANCIS (1803-1868).

Church of England bishop. Born in England. In 1850 he was consecrated first bishop of Montreal. Ten years later he was elected Metropolitan of the Church of England in Canada.

GALT, SIR ALEXANDER TILLOCH (1817-1893).

Financier and statesman, born in England at Chelsea; son of John Galt, Scottish novelist. He was interested in land settlement in eastern Canada. He represented Sherbrooke in the Legislature of Canada in 1849, and took a very active part in bringing about the creation of the Dominion. He held the Finance portfolio both

before and after Confederation, and was High Commissioner for Canada in London, 1880-1883.



LOUIS FRECHETTE

GARNEAU, FRANÇOIS XAVIER (1809-1866). One of the best known of French Canadian historians, born in Quebec. His *Histoire du Canada* ran through five editions, and has been translated into English.

GARNIER, CHARLES (1605-1649). Jesuit martyr. He was with Jogues at the Huron Mission in 1636, and laboured among the Tobacco, or Petun, nation near Nottawasaga in 1639 and 1640. He suffered martyrdom at the Huron Mission.

GEOLOGY. The traveller across Canada is impressed with the prominence of its physical features. Most noticeable among



NATURAL ARCH (ANTICLINE)
It is on Bull River Falls, Kootenay, British Columbia.

Photo: Canadian Official News Bureau

those features are: (1) the Appalachian mountain system which extends northeastward to the tip of the Gaspé peninsula in Quebec; (2) the wooded granite country extending in a great arc from Ungava through northern Quebec, northern Ontario, northern Manitoba, northern Saskatchewan into the North-West Territories to the mouth of the Mackenzie River; (3) the steppe-like western plains; and (4) the parallel ranges of mountains which extend through British Columbia from south-east to north-west. If there be included with these four major physiographic areas the relatively flat-lying southern peninsula of Ontario and the Acadian uplands lying east of the Appalachian ranges, the significant Canadian territory, with the exception of the Arctic Archipelago, is accounted for. The outline of Canadian geological history which follows will serve to explain the origin of these distinctive physiographic regions.

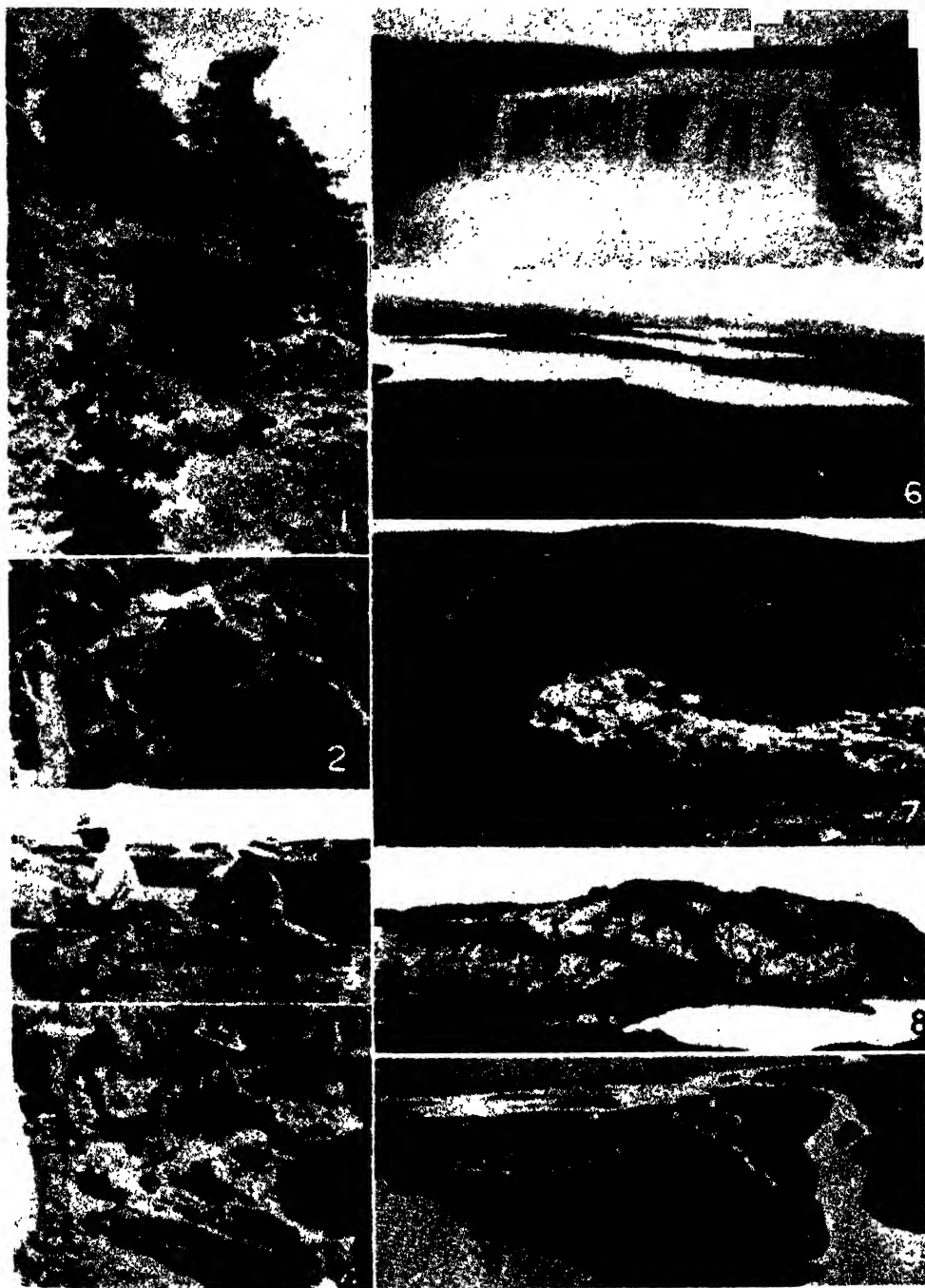
The major time divisions in geological history are: (1) the Precambrian (the time of very elementary life), (2) Palaeozoic (the time of early invertebrates, fishes, and amphibians), (3) Mesozoic (the time of reptiles), (4) Tertiary (the time of mammals), and (5) Post-Tertiary (the time of modern forms of

life). It will simplify the discussion if the development of the structural feature of the Canadian territory be dealt with in order under the headings of these five time-divisions. See MESOZOIC; PALAEOZOIC; TERTIARY.

Precambrian. The rocks of the oldest geological time-era are widely exposed in Canada. The Archaean shield, which occupies 1,800,000 sq. miles, forming an arc, east, south, and west of Hudson Bay, is one of the great blocks of Precambrian rocks available for investigation on the surface of the earth. According to the most recent computations, based on the disintegration of uranium-bearing minerals, the oldest members of this complicated rock-series were formed at least a thousand million years ago. It may be reasonably assumed that rocks of this general time-era underlie younger formations throughout Canada. They are found exposed as well in the Selkirk range in British Columbia and in part throughout the Rocky Mountain range, as well as in the Yukon plateau. They are seen in the Nova Scotia peninsula and in places in the Appalachian system. They have suffered varying degrees of change because of the varying intensity of the earth forces which have acted on them since the time of their formation. Originally in the shield they consisted of lavas and sediments, coarse and fine. The lavas were poured out by successive igneous invasions, accompanying major mountain-building processes. Mountains rose and were worn away, and rose again, and at the close, basic lavas with interbedded sandstones covered large areas. Where these beds still remain, they occupy horizontal positions. Through later geological history the shield has remained a continent only occasionally invaded by the sea. It has been deeply eroded, and there have been exposed segregations of gold, silver, lead, zinc, copper, nickel, iron, and radium ores which were originally formed through igneous agency deep in the rocks as they then existed. By reason of these deposits, now available, the Precambrian shield has become a factor of great economic importance. Man has at long last found a use for these materials, so long buried in the rocks.

Elsewhere, Precambrian rocks are more uniformly sedimentary in type. Quiet deposition took place in the seas of the time, giving rise to sandstones, mudstones, and limestones, and this continued into Palaeozoic times. There is little indication of a great break between Precambrian and later sediments such as occurs in the major unit in the Canadian shield.

Palaeozoic. In Palaeozoic times, deposition took place intermittently or continuously over the greater part of what is now



GEOLGY IN CANADA

1. Hoodoo, Scottie Creek, British Columbia. A Hoodoo is formed by the erosion of softer rock under a hard cap. 2. A fossil ammonite in situ at Sappi Lake. 3. Chiselling a fossil from hard rock in Alberta. 4. Fossilized dinosaur bones. 5. Alexandra Falls, Hay River, Great Slave Lake. The water falls 106 ft. over upper Devonian limestone and shale. 6. Great Bear Lake (Contact Lake) showing Precambrian topography in a native silver mining district. 7. A recent deposit from springs of calcareous tufa, Big Hill Creek, Alberta. 8. Mountain top in Strathcona Park, Vancouver Island showing white limestone formation intruded by black jabbro. 9. Delta of the Slave River, North-West Territories.

Photos: Canadian Official News Bureau; A. E. Cameron; J. A. Allan; Canadian National Railways

the surface of Canada. The Canadian shield was probably above water for the greater part of the Palaeozoic era, though it too was submerged in mid-Palaeozoic times. Eastward to the Atlantic and westward to the Rockies, limestones and sandstones were in process of formation. The relatively deep seas, peopled with abundant life, the remains of which provided the material for the limestones, rested on the deeply eroded rocks of the Precambrian shield, and a major unconformity separates Palaeozoic from Precambrian underlying formations around the rim of the shield. In the Rocky Mountain area, however, and westward to the Precambrian uplands of central British Columbia, deposition appears to have been practically continuous from Precambrian into Palaeozoic times, and with little change in the sand and mud sediments of fairly shallow seas, poor in organic life.

Seas deepened, shallowed, or disappeared; but no great movements took place in Palaeozoic times except in one area in Canada. In the latter part of the Devonian period, folding of the strata took place in the Appalachian area and in Nova Scotia, and granites invaded the formations during the mountain building process. These granites are now widely exposed. Though mountain building was extensive in Precambrian times, these mountains have long since been levelled down. The oldest mountain structure in Canada, recognizable as such to-day, dates from mid-Palaeozoic times, when at the close of the Devonian period the Appalachian system took form. The isolated volcanic necks which are known as the Monteregian Hills were active volcanoes at this time.

In later Carboniferous times, conditions were favourable in many parts of the world for the accumulation of vegetable materials under swamp conditions which made possible the subsequent transformation of the organic material into beds of coal. In Canada, this was the case only in eastern New Brunswick and northern Nova Scotia, where the coal beds are of the same age as the extensive coal deposits of the Pennsylvania

fields. In the Rocky Mountain region, on the other hand, where rocks of Carboniferous age are widely exposed, relatively deep seas prevailed, and conditions were unfavourable to the formation of coal. In that region the period is represented by fossiliferous limestones of great thickness and extent.

Mesozoic. In Mesozoic times, Canada east of the Manitoba lakes was for the greater part of the whole time above water. But the extensive seas and inland lakes lay on the western part of the continent, over what are now the prairies, the foothills, and the Rocky Mountains extending northward to the Arctic

Archipelago; and again on the western fringe of the continent, including Vancouver and the Queen Charlotte Islands and the western edge of the mainland. There were alternations of marine, fresh-water, and marine conditions. The seas or lakes were characteristically shallow, and sandstones, rather than limestones, were deposited.



CRETACEOUS FORMATIONS

Anticlinal fold of the Cretaceous Age, late Mesozoic, Belly River beds, Little Red Deer River, Alberta.

Photo: J. A. Allen

In the swamps and on the uplands, vegetation was abundant, particularly toward the close of Mesozoic times; and in the Cretaceous formations of late Mesozoic age, extensive coal beds are found in Alberta and on Vancouver Island. Except where they have locally been affected by mountain-building stresses, these coals are of lower quality than the Pennsylvania and Nova Scotia coals. They are very much younger, and have been subjected to the pressure of overlying rocks for a much shorter time. The bitumen, gas and oil in the Cretaceous rocks of Alberta and the North-west Territories are probably derived from organic material, animal and vegetable, in the rocks of Jurassic (mid-Mesozoic) times.

In the Cordilleran region, major mountain-building movements took place in Mesozoic times. West of the Rocky Mountain trench, movements of elevations and igneous activity took place, culminating in late Jurassic times in the great granite invasion which is seen exposed to-day in the granite Coast Range. Throughout all this period, and almost until the close of the Mesozoic era, the Rocky Mountain area remained

undisturbed, and formed a basin in which sediments from the western uplands were being deposited almost uninterruptedly. Toward the close of Mesozoic times, however, the great movement known as the Laramide revolution began, and continued on through early Tertiary times, resulting eventually in the throwing up of the mountain system of the Rockies, which, despite later erosion, remains the major structural feature of Canada as we know it to-day.

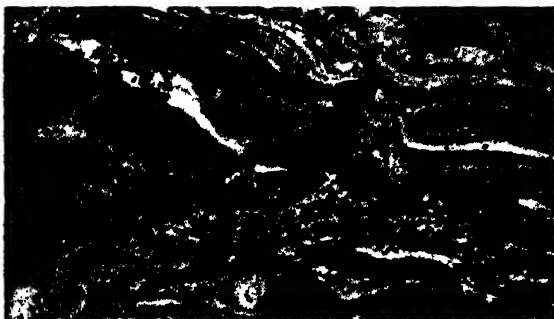
Tertiary. In Tertiary times, elevations of the land areas took place generally throughout Canada. The main region of sedimentation was what are now the Western plains, where practically continuously on the top of the Cretaceous beds, sandstones and, later, conglomerates of Tertiary age were deposited in fresh water lakes and outwash plains. These conglomerates, now found capping some of the buttes in Saskatchewan and Alberta, represent the products of rapid erosion from the Rocky Mountain system which was now coming into being. In the conglomerates are found the bones of the earliest mammalian life, a fauna which took the place of the immense reptiles of Mesozoic times, whose bones have been found in considerable numbers in the Red Deer freshwater beds of Cretaceous age in southern Alberta.

During the Tertiary period of land elevation, extensive erosion of the land surfaces took place. In the Appalachian system the cross trenches were worked down, in southern Ontario the sharp northward facing cliffs of hard Silurian limestone became more sharply defined, and on the Western plains the river which flowed eastward and northward cut deeply against the rising land. The movement of elevation of the Rocky Mountain system continued throughout Tertiary times. Because of pressure from the west, recumbent folds developed, disruption took place, and successive blocks were pushed, like cards in a pack, eastward over younger strata. On entering the mountains from the east to-day, one passes several blocks of beds, each repeating the formation shown in the ex-

posures already passed, a striking series of block-faulted rocks.

Post-Tertiary. Following after the extensive land elevation of Tertiary times, and partly in consequence of that elevation, ice sheets began to form in centres west and east of Hudson Bay, to the extent that masses of moving ice pushed out from these areas of accumulation, and covered Canada to the edge of the Rocky Mountains and eastward probably to Nova Scotia. In the mountains of British Columbia and the Maritimes, local glaciers were formed, which pushed out to meet the main ice sheets from the north. In all probability the ice sheets

from the western (Keewatin) and the eastern (Labradorian) Hudson Bay centre melted backward and re-advanced several times during the Great Ice Age of Pleistocene times. There are clear-cut evidences of several such advances and recessions in the glacial materials which were deposited in the northern United



PRECAMBRIAN FORMATION

Floor structure in foliated Precambrian gneiss on the north shore of Athabaska Lake, Saskatchewan.

Photo A. E. Cameron

States at the southern margin of the ice front, and in Canada, inter-glacial deposits have been found, carrying evidence that temperate climates prevailed between the recession and the re-advance of the great ice masses.

The ice sheets, as they moved forward, carried with them the loose and weathered rock, and left the surfaces fresh, smooth, and frequently polished. The loose glacial material deposited by the receding glaciers blocked river channels and dammed back lakes. The characteristically hummocky appearance of the glacial deposits is a feature of the landscape in many parts of Southern Canada. In late glacial times, the receding ice front prevented the drainage which would be normally northward from taking its regular course, and large lakes were impounded which found their drainage at first to the south. The Great Lakes are relics of an old glacial lake system, and the silt deposited in glacial Lake Agassiz has contributed to the productive soil of what is now the Red River valley in Manitoba.

Since glacial times, elevation has taken place in those parts where the load of the

ice sheet was greatest. The blocked river channels have been reopened, or new river courses have been formed. The fine rock flour which the ice sheets spread over the country has been transformed into soil materials, which form the richest resources of Canada. But the main physical features

the outbreak of the Rebellion of 1837-1838. He was replaced by Lord Durham.

GOVERNOR-GENERAL. See article, Vol. V.

GRAND MANAN ISLAND. An island off Passamaquoddy Bay, at the entrance to the Bay of Fundy. It was first discovered by Champlain, and the name, which is of Indian origin, dates back to his time. The island is 22 miles long and from 3 to 5 miles wide. Its picturesque rock scenery has made it a resort of painters.

GRAND PRÉ. A beautiful village in Kings County, Nova Scotia, on the Basin of Minas. The French settlers there were expelled in 1755 by order of the English at the close of Queen Anne's War. Grand Pré has been immortalized by Longfellow in his poem *Evangeline*.

GREAT BEAR LAKE. A large lake, 11,660 sq. miles in area, in Northern Canada, discharging into the Mackenzie River by Great Bear River. It was discovered by men of the North West Company about the beginning of the nineteenth century. Sir John Franklin wintered there in 1825-1826 on his second expedition to explore the Arctic coast of North America. Pitchblende, from which radium is extracted, was discovered in 1930 on Cameron Bay, on the eastern side of the lake. This discovery transformed Great Bear Lake from an inaccessible wilderness into an important mining centre connected by steamer, aeroplane, and wireless with the outside world.

GREAT LAKES. See article, Vol. IV.

GREAT SLAVE LAKE. See article, Vol. IV.



GRAND PRÉ PARK, NOVA SCOTIA
Evangeline's Well and the willows.
Photo Canadian Official News Bureau

of the country are little changed from the time when the ice melted back from Canadian territory 20,000 years ago. See **GEOLOGY**, **ICE AGE**.

GHENT, TREATY OF See article, Vol. IV

GOSFORD, ARCHIBALD ACHESON, SECOND EARL OF (1776-1849). British statesman. He served as Governor-General of Canada from 1835 to 1838. Although a man of tact and moderation, he was unable to prevent



SETTLEMENT AT CAMERON BAY ON GREAT BEAR LAKE
Pitchblende, from which radium is extracted, has recently been discovered in this area.
Photo Canadian Official News Bureau

GRENFELL, SIR WILFRED THOMASON (b. 1865). Medical missionary. He was born and educated in England. His experience with a hospital ship, fitted out by himself, in the North Sea fisheries, led him to interest himself in the hard lot of the Labrador fishermen. He went to Labrador in 1892, and since then has built five hospitals, seven nursing stations, two orphanages, two large schools, co-operative stores, and has done much to encourage special industries and child welfare work along the coast. He founded the King George V Seamen's Institute in St. John's.

The value and importance of his lifework have been recognized in honorary degrees from many universities and in such distinctions as the Murchison Bequest of the Royal Geographical Society, the Livingstone gold medal of the Royal Scottish Geographical Society, and the gold medal of the National Academy of Social Sciences, in the United States. He is Superintendent of the International Grenfell Association.

Among his books are: *Forty Years for Labrador*, *Romance of Labrador*, *Tales of the Labrador*, *Adventure of Life*, *Northern Neighbours*, *Down to the Sea*.

GREY, ALBERT HENRY GEORGE, 4th EARL. See article, Vol. IV.

GRIER, SIR EDMUND WYLY (born 1862). Portrait painter. Born in Melbourne, Australia, he has spent most of his life in Canada. He exhibited at the Academy in London and at the Salon in Paris. His portraits include those of Goldwin Smith, Edward Blake, and Sir Sandford Fleming. He was president of the Royal Canadian Academy in 1936.

HALDIMAND, SIR FREDERICK (1718-1791). Soldier and statesman, born in Switzerland. He took part in the British expedition against Canada in 1758 under Abercromby. He accompanied Amherst in 1760 to Montreal, and witnessed the capitulation of Canada. He became Governor of Three Rivers in 1762; and five years later military commander in Florida. In 1773 he succeeded Gage in the command at New York. Five years later he was appointed Governor of Canada. One of his problems was the settlement of the United Empire Loyalists. He had canals made on the Upper St. Lawrence, and strengthened the fortifications at Quebec. He returned to England in 1784.

HALIBURTON, THOMAS CHANDLER (1796-1865). Jurist and humorist, born in Windsor, Nova Scotia. He sat in the Nova Scotia legislature, 1826-1829. He was a judge of the Supreme Court of his province, 1841-1856. He removed to England and sat in Parliament, where he interpreted the Colonial

point of view. He is remembered, however, as a writer who approached genius. See *LITERATURE*, Vol. IX, page 4774.

HALIFAX. See article, Vol. IV.

HAMILTON. See article, Vol. IV.

HARBOUR GRACE. Settled by the English shortly after 1610, it is to-day the second most important town in Newfoundland. It is situated on the north side of Conception Bay, and has railway connection with St. John's. It is a port of entry and handles much of the trade of the island. It has been the point of departure for several transatlantic aeroplane flights. Population, 2215 (1935).

HARRIS, ROBERT (1849-1919). See *ART*, Vol. IX, page 4725.

HEARNE, SAMUEL (1745-1792). Explorer and trader, born in England. He was sent out to Fort Prince of Wales by the Hudson's Bay Company, and, after two unsuccessful efforts, led an expedition, 1770-1772, to the mouth of the Coppermine River, returning by way of Great Slave Lake. He was the first white man to visit any of this immense region of what is now northern Canada. He was governor of Fort Prince of Wales in 1782 when it was captured and destroyed by the French admiral, La Perouse. His *Journey from Prince of Wales's Fort to the Northern Ocean* was published in 1795.

HEAVYSEGE, CHARLES (1816-1876). Poet and dramatist. Born in Liverpool. He settled in Canada in 1853, and worked in Montreal as a wood carver. His principal books of verse are *Sonnets*, *Saul*, and *Jephthah's Daughter*.

HENRY, ALEXANDER (1739-1824). Fur trader. Born in New Jersey, he spent sixteen years trading in the West. He was at Mackinac at the time of the massacre of the garrison by the Indians and the account given in his *Travels and Adventures in Canada and the Indian Territories, 1760-76*, was used by the historian, Parkman.

HISTORY, CANADIAN. See *CANADA*, Vol. II. **GEORGE II**, Vol. IV.

HOWE, JOSEPH (1804-1873). A Nova Scotian journalist and statesman who first opposed and later supported the entry of his province into the Confederation. He entered public life about 1836, and became a leader in the fight for responsible government in Nova Scotia. He was Premier of the Province, 1860-1863, and a member of the first Dominion cabinet in 1863. He was associated with Samuel Cunard in the establishment of the first line of transatlantic steamships.

HUDSON BAY. See article, Vol. IV.

HUDSON'S BAY COMPANY. See article, Vol. IV.

HUGHES, SIR SAM (1853-1921). Soldier. He served in the Fenian Raids in 1870 and in the South African War, 1899-1900.



SIR SAM HUGHES
Photo Central

Hughes entered public life in 1892, and was Minister of Militia and Defence from 1911 to 1916. In the World War he had much to do with organizing the Canadian army and sending it overseas.

HURON, LAKE. See article, Vol. IV.

IBERVILLE, PIERRE LE MOYNE, SIEUR D' (1661-1706). French

Canadian soldier and explorer. He accompanied De Troyes in the expedition to Hudson Bay in 1686. In 1688 he returned to Hudson Bay and the following year captured the English ship *Hampshire* and brought her to Quebec. He captured Fort Severn in 1690, and Fort Nelson in 1694. Two years later he led an expedition to Newfoundland.

D'Iberville discovered the mouth of the Mississippi in 1698 and founded the colony of Louisiana.

INDIAN, AMERICAN. See article, Vol. IV.

INGLIS, CHARLES (1734-1816). Church of England bishop, born in Ireland. He emigrated to America and taught in a school in Pennsylvania. In 1777 he became rector of Trinity Church, New York City. He removed to Nova Scotia after the American Revolution and in 1787 became the first bishop of Nova Scotia, with jurisdiction over practically all British North America. He was instrumental in establishing the first Canadian seat of higher learning, King's College, Windsor, Nova Scotia.

JACOBI, OTTO REINHOLD (1812-1901). Landscape painter, born in Prussia. He settled in Canada in 1860 and devoted himself to painting landscapes. From 1890 to 1893 he was president of the Royal Canadian Academy of Arts.

JOGUES, ISAAC (1607-1646). Jesuit missionary, and martyr, born at Orleans, France. He was sent to Canada in 1636. He worked among the Hurons and the Tobacco, or Petun, nation, and in 1641 travelled west to Lake Superior. He was tortured by the Mohawks in 1642, but managed to escape to the Dutch at Fort Orange. In 1646 he returned to the Iroquois country and was killed there.

JOHNSTONE, JAMES WILLIAM (1793-1873). Statesman, born in Jamaica. He studied law in Nova Scotia; was appointed Solicitor-General in 1834; became a member of the Executive and Legislative Councils of the colony in 1838. He was leader of the Conservative party in Nova Scotia, and led the provincial government from 1843 to 1847. In 1857 he again formed an administration, but was defeated in 1860. Once more he was Premier of the province, from 1863 to 1864.

KANE, PAUL (1810-1871). Artist, born in Ireland and brought to Canada as a child. He studied art, and in 1845 set out from Toronto on a journey through the territories of the Hudson's Bay Company, to paint the Indians of the western plains and the Pacific coast of what is now Canada. He returned with hundreds of sketches, and most of his finished pictures hang to-day in the Royal Ontario Museum in Toronto. He published an account of his travels in *Wanderings of an Artist among the Indians of North America*.

KING, WILLIAM LYON MACKENZIE. See article, Vol. V.

KINGSFORD, WILLIAM (1819-1898). Engineer and historian, born in London, he emigrated to Canada in 1837. By profession an engineer, he devoted much of his life to the preparation of his monumental *History of Canada*, published in ten volumes between 1887 and 1898.

KINGSTON. A city of Ontario, at the eastern end of Lake Ontario. It was founded by United Empire Loyalists in 1783; was the capital of Canada, 1841-1844; and was incorporated as a city in 1846. It is the site of Queen's University, the School of Mining and Agriculture, and of the Royal Military College. The old French fort Frontenac, which stood on the same site, dated back to 1673.

Situated at the entrance to the St. Lawrence, Kingston, with its large harbour is a port of call for steamers. Industries include boat-building and the manufacture of locomotives and railway rolling stock, cotton and woollen goods, leather, pianos, and tiles. Population, 23,439 (1931).

KING WILLIAM ISLAND. An island north of Adelaide Peninsula on the Arctic coast of Canada. It was named by the explorer, John Ross, in 1830, after King William IV. Amundsen sailed round the island in his voyage of 1903-1906, when he made the North-west Passage.

KIRBY, WILLIAM (1817-1906). Novelist and poet, born in England he entered Canada in 1832. He wrote several books, including the *Annals of Niagara*, but is remembered chiefly by the historical novel, *The Golden Dog*, a story of old Quebec.



REVELSTOKE FROM MOUNT REVELSTOKE AND MOUNT BEGBIE

Revelstoke is a supply centre for a mining and lumbering district in British Columbia.

Photo Canadian Pacific Railway

which has run through many editions and has been translated into French by two eminent French Canadian poets, Louis Frechette and Pamphile LeMay.

KLONDIKE. See article, Vol. V.

KRIEGHOFF, CORNELIUS (1812-1872). Artist, born in Germany. He worked for some time in the U.S. War Department. About 1850 he went to Montreal and spent the remainder of his life partly in the province of Quebec and partly in Chicago, where he died. Many of his paintings are found in Canadian galleries and in private collections.

LA BARRE, JOSEPH ANTOINE LEFEBVRE DE (1622-1688). Statesman. He served in 1665 as Governor of La Guyane (Guiana). He was sent to Canada and served as Governor, 1682-1685.

LABRADOR. See article, Vol. V.

LABRADOR CURRENT. See article, Vol. V.

LACOMBE, ALBERT (1827-1916). Missionary. He was born in Lower Canada, and after being ordained priest was sent as a missionary to the Canadian North-west. He spent his life in the service of the Indians

and half-breeds, over whom he had a profound influence in what are now the Prairie Provinces of Canada. He prepared a grammar and dictionary of the Cree language.

LALEMANT, CHARLES (1587-1674). Jesuit missionary, born in France; he was sent to Canada in 1625. He was the first superior of Jesuit missions in Canada, and his narrative of 1625 gives an admirable account of life in the new settlement at Quebec. He returned to France in 1636 and died there.

LALEMANT, GABRIEL (1610-1649). Nephew of Charles, and also a Jesuit missionary, he entered Canada in 1646. He was tortured to death by the Iroquois with every refinement of cruelty.

LALEMANT, JEROME (1593-1673). Brother of Charles. He entered Canada in 1638, and was superior of Jesuit missions in Canada, 1645-1656, and vicar-general to Bishop Laval, 1659-1665. He died at Quebec.

LAMPMAN, ARCHIBALD (1861-1899). Born at Morpeth, Ontario, he was one of the most authentic of Canadian poets. He published three volumes of verse: *Among the Millet*, *Lyrics of Earth*, and *Alcyone*. A collected

edition of his poems was published after his death.

LANGUAGE. In Canada, English and French are the most used languages. Both languages enjoy official status, and in the province of Quebec French-speakers far outnumber the English-speaking population. Of other European languages, German, Russian, and Scandinavian are used by considerable numbers, though nearly all of these people possess English as a second language.



BILINGUAL MONTREAL

This is a sign from the streets of Montreal, where directions are given in both French and English.

Photo Boris Studios, Ltd

Various Indian languages are used by over 100,000, while Eskimo is the native tongue of only a very few.

Distribution. Of Canada's 10,376,786 inhabitants (census of 1931) only slightly over a quarter of a million speak neither English nor French, and as among these are reckoned many Indians and Eskimos, the number of white Canadians possessing neither of the official languages may be regarded as almost negligible. Nearly all of them are to be found scattered over the four western provinces.

The English speakers are in a majority in all the provinces, except Quebec, and even there over a third of the French-speaking population can speak and understand English.

German, which is usually preserved as a second language by those of Teutonic stock,

is common in parts of eastern Ontario, notably the districts around Kitchener (formerly Berlin) and Tavistock.

The Russians and the Ukrainians, whose numbers have been increased by immigration during the past two decades, are found either in the Prairie Provinces or in the large industrial centres of the East; several papers and magazines in the Russian language, published for the most part at Winnipeg, cater to their literary requirements.

The Scandinavians, practically all of whom speak English, are well distributed, though more thickly concentrated in Alberta than elsewhere.

Italian, Greek, and other European languages are heard occasionally in the cities and towns, but are as yet uncommon in the rural districts.

Canadian English. English, the mother tongue of 7,000,000 Canadians (of whom about 5,400,000 are of British stock), has preserved certain characteristics that usually enable a sensitive ear and eye to distinguish between it and the English of the United States. In western Ontario and in the Prairie Provinces there is considerably less distinction between Canadian and American speech than in British Columbia or in eastern Canada.

Generally, it may be said that the English of Canada, falling under the direct influence of both Great Britain and the United States, is American in vocabulary, but British in its idioms. For instance, Canadians, with Americans, say "elevator," not "lift"; "conductor," not "guard"; "spool of thread," not "reel of cotton." Their "corn" is Indian corn, not just any grain in the ear. Yet even here, national peculiarities make themselves felt. Canadian "boots" are American "high shoes." Where the British prefer "shop" and the Americans "store," Canadians employ either almost indifferently; similarly they make use of both "perambulator" and "baby-carriage," both "underground" and "subway," both "suspenders" and "braces."

The persistence of differences in idiom is interesting, in view of the close association between the two neighbouring groups of English-speakers. Eastern Americans have, for a long time, been saying "ten minutes of six" as well as "ten minutes to six"; the native-born Canadian practically never uses the first form, though nearly always familiar with it. He will talk of "putting on side" and going to "bath (not bathe) the baby." In his pronunciation, too, he invariably renders "lieutenant" as "*lef ten ant*," the British way, and makes the last letter of the alphabet sound "*zed*." Such little distinctions, however, are just enough to give Canadian English a slight flavour of its own,

apart from them, Canadians and Americans may be said to use the same medium of expression.

As for differences within the Dominion itself, they may usually be traced to the existence of various English, Scottish, or Irish groups, who at widely separated periods supplied the successive waves of settlement. Scottish intonations and turns of expression abound in the Maritime Provinces, especially Nova Scotia and Prince Edward Island. Labrador, settled chiefly from Newfoundland, offers many examples of archisms from the English of Queen Anne's day or even earlier. Here a young male caribou is called a "pricket," and a common word for the beach is "landwash." The English of Quebec and Eastern Ontario resembles fairly closely that of the adjacent sections of the United States, though here again Scottish (and Irish) influences are strong. One might expect to find French exerting considerable influence on Quebec English, but as a matter of fact hardly a current word can be traced to this source. Little borrowing has been in the other direction, from English into French. In the three Prairie Provinces, where American settlers are numerous, and there are few natural barriers along the border, the closest linguistic resemblance exists between the two nations. British Columbia, on the other hand, and particularly Victoria, has an idiom and intonation that come nearer to the English of the mother country than those of any other part of Canada.

French. The French language of Quebec and of sections of New Brunswick and Ontario peopled from this province exhibits interesting differences from the French that is current in France to-day, these, however, are by no means an indication that it has degenerated or is a mere *patois*. In fact, what has happened with the English language in certain parts of the eastern United States has been repeated here with French; the phrases and pronunciation of two centuries ago have been retained in the colonial society while altering very considerably in the homeland. Hence many of the sounds and turns of expression that offend the ear attuned to the French of modern Paris are in reality those of the correct French of 1700. Others, again, are traceable to the character of the early immigration into Quebec, which was largely Norman, or, at all events, northern French. To this day the maritime flavour is retained in such expressions, common in the rural districts, as "embarquer" and "debarquer" for getting in and out of a carriage or sleigh. Borrowings from English, particularly for the rendering of ideas connected with industry and machinery, have been fairly numerous, but a

strong reaction against these has made itself felt in recent years.

Bilingualism. The use of two languages among those of French stock is far more common than among the English; according to the 1931 census, of a total of 2,927,990 people of French descent, 1,148,652, or about 40 per cent, spoke both languages. This compares favourably with the figure for English Canadians, of whom fewer than 200,000 out of a total of 5,381,071 were fully bilingual. A comparison of the two races in Montreal brings out the situation as clearly as anything could: in 1931, of the one million population of Montreal Island, a little over a quarter spoke English only; practically the same number spoke French only; and 44 per cent possessed both languages. Nearly all of this third group were of French origin. In the whole province of Ontario, with its 3,431,683 inhabitants, there were only 64,534 who spoke French alone, while 219,532, practically all of them French, were bilingual. It is only in the rural districts of Quebec and New Brunswick that great numbers of French *habitants* can be found who know no English; Quebec alone has 1,615,155 of them. A curious situation has arisen along the shores of the lower St. Lawrence, where to-day one can find names like Angus McLean borne by farmers who know not a word of English, their Scottish forbears having been absorbed into the surrounding French population.

Gaelic. Other Scottish settlers, however, have clung tenaciously to their language as well as to their names and national characteristics. There are over 32,000 Canadians who speak Gaelic as their mother tongue. Most of these are inhabitants of Nova Scotia, where the county of Inverness alone has nearly 10,000, but elsewhere, too, there are considerable numbers, as in the Glengarry district of Ontario.

Indian and Eskimo. Numerous Indian languages are spoken (there is no Indian writing except pictographs) in Canada. Eleven different idioms have been distinguished by scholars, the West coast showing the greatest variety. Those with the widest currency are Algonkian, spoken in some form all the way from Nova Scotia to the foothills of the Rockies, and Athapaskan, the language of most of the tribes in the North-West Territories. All are decidedly difficult for the white man to master, making abundant use of prefixes and suffixes for the expression of relationships between ideas. These Indian tongues are used by about 110,000, half of whom live in Ontario and British Columbia.

The Eskimos of the north, though few in number (probably less than 4000), employ an interesting idiom, rich in concrete terms

and in suffixes, of which there are over 300. Although an average Eskimo may possess as many as 10,000 words altogether, in conversing with the white man a special jargon is often used, comprising about 500 uninflected words.

Similarly, on the west coast, a trade jargon was created during the nineteenth century for the intercourse between the white settlers and the Indians. It was given the name Chinook, from the native language contributing most to its vocabulary, but contained as well French, English, and other ingredients. Chinook, however, is now said to be fast dying out.

Language Development. Any considerable change in the relative position of the two official languages is unlikely; certainly there is no chance that either of them will engulf the other. As the intellectual life of Canada develops and becomes richer, the close contact between French and English should be of profit to both; bilingualism may then be the rule, as it is in Switzerland and other European countries. In any event, the meeting on Canadian soil of venerable cultures is bound to have a continuing effect on the vocabulary and the familiar modes of expression.

LASALLE, RENE ROBERT CAVELIER, SIEUR DE. See article, Vol. V.

LAURENTIAN PLATEAU. See article, Vol. V.

LAURIER, SIR WILFRID. See article, Vol. V.

LAVAL, FRANÇOIS XAVIER DE (1623-1708). Born in Laval, France, and sent to Canada in 1659 as the first Bishop of Quebec. A man of piety and inflexible will, he was almost continually at odds with the governor and other officials over such matters as the sale of brandy to the Indians. He founded the Seminary of Quebec, afterwards developed into Laval University.

LA VERENDRYE, PIERRE GAULTIER DE VARENNES DE (1685-1749). Born in Three Rivers, on the St. Lawrence, the only one of the early explorers of Canada who was native-born. His ambition was to find an overland route to the Pacific, and he and his sons devoted themselves to that object from 1731 to his death. He discovered Lake Winnipeg and the waterways between there and Lake Superior, and either he or his sons made their way to the Saskatchewan and the Missouri and the upper water of the Yellowstone.

LAW. There are numerous definitions of the term law. In its widest sense, according to the jurist Salmond, law includes "any rule of action." In its more technical and restricted sense, which is of more interest, law is "the body of principles recognized and

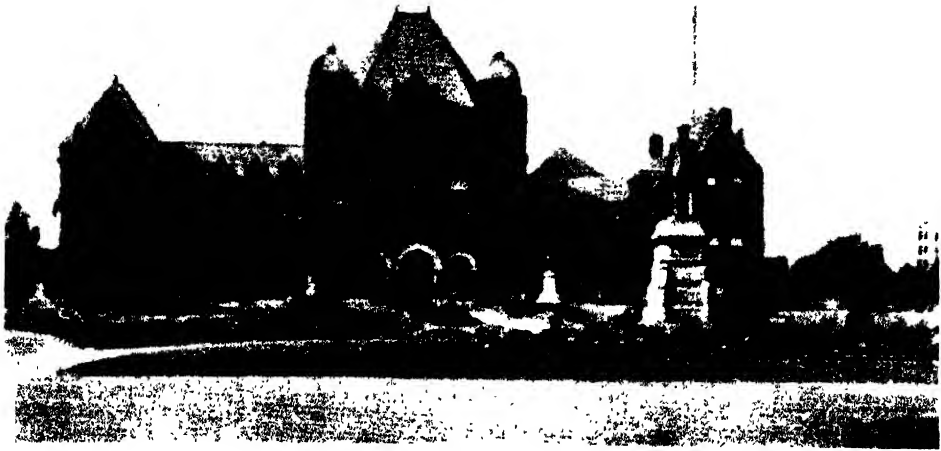
applied by the State in the administration of justice" or "the rules recognized and acted on by courts of justice." In everyday language, law includes the rules, regulations, orders, and prohibitions which a man must observe if he is to avoid the possibility of legal action brought against him by the agents of the State or by private individuals.

The sources of law are: (1) Legislation or statutes enacted by the legislature, together with orders and regulations passed under the authority of such legislation; (2) decisions, judgments, opinion of courts and judges of competent jurisdiction; (3) the common or customary law; and (4) of less importance in that they are persuasive rather than compulsory, the opinions of experts and authorities.

In Canada the situation is complicated by two facts. First, Canada originally took over either English or French law. Second, Canada is a federal state or nation and within Canada there are ten law-making bodies, each sovereign within its own spheres. This situation is further complicated by the fact that until recently the Parliament of the United Kingdom could also pass laws which were binding in Canada. Indeed, in certain cases when it is asked to do so by Canada, it still passes such laws.

To answer the question or deal with the problem of the law in force in Canada it is necessary to find out: (1) The parts of Canada which took over English law; (2) the year in which they took it over; (3) how much of the English law was taken over at that time; (4) how much English law has been absorbed into the Canadian system since that time; (5) what is the present effect of English law on Canadian law; (6) what parts of Canada took over French law; (7) the year in which this was taken over; (8) the effect of French law (in France) on the French law as applied in Canada; (9) how much French law was taken over; (10) how the legislative and other law-making powers in Canada have been distributed between the Dominion and provincial legislatures and authorities; (11) how the laws in one English law province affect the laws in other English law provinces; (12) how the English law in force in Canada has affected the French law; (13) how the French law in force has affected the English law; and finally, (14) how the law in force in the United States of America and other countries, and agreements reached at international conferences have affected Canadian law, if at all.

Influence of French and English Law in Canada. English criminal law as modified by the action of Canadian courts and legislatures is in force in the whole of Canada. English civil law or that part of English law which



PARLIAMENT BUILDINGS, TORONTO

Photo: Canadian Pacific Railway

is not criminal law, as similarly changed, is in force in the whole of Canada, except the province of Quebec. The English law was introduced into the various provinces at different times: Nova Scotia in 1713; Ontario in 1792; Manitoba in 1870; Saskatchewan in 1870, Alberta in 1870; and British Columbia in 1858. New Brunswick and Prince Edward Island are in the same position as Nova Scotia in that they originally formed part of that colony which was ceded to Great Britain in 1713, so that the English law which is now in force in these provinces, like that in Nova Scotia, would date back to 1713. In 1774 the Quebec Act stated that the old French law should be re-established in that colony, Quebec, in civil matters, but that the English criminal law should be enforced from that time forward.

The next question is how much of the English and French law became effective, and the general answer—to the English part at least—is that all of the common or customary law (found in the main in the decisions of the courts) was taken over, with the exception of those parts which were clearly inapplicable. In contrast, only those parts of the legislative or statute law which were clearly or expressly applicable came into force in the colonies.

With the establishment of colonial courts and legislatures the colonies began to add to this original body of law and to change it, so the next question to be answered is what further contributions did the mother countries, Great Britain and France, make to the law of Canada? In the case of France, little if anything has been contributed except in an indirect fashion by way of influence or

through the borrowings made, as, for example, from the codes of Napoleon. But much has been contributed by the great nineteenth century jurists in France through their writings; and much by Great Britain. Until 1931 all statutes of the Parliament of Great Britain which could be held to apply to Canada by express words or necessary intendment were in force in Canada, and any Canadian statutes (whether Dominion or provincial) which were repugnant to these were of no effect.

Since 1931, when the Statute of Westminster was passed by the Parliament in Great Britain and accepted by Canada, only those statutes which Canada expressly requests to be made applicable apply in Canada. It is rather more difficult to be definite about the decisions and judgments of the English courts, but one can conclude somewhat as follows: The Judicial Committee of the Privy Council, when engaged in hearing a Canadian case, is a Canadian court, and all of its *Canadian* decisions have the force of law in Canada. The House of Lords, when sitting as a court, is not a Canadian court, but its decisions on matters of English law have the force of laws in Canada. The other English courts have a strong persuasive influence on the decisions of Canadian courts, particularly courts of appeal. On a matter of English law, where there is no Canadian decision of equal authority to the contrary, the Canadian courts almost invariably follow the English Court of Appeal. Here it should be noted that the courts in the English law provinces apply the principle of *stare decisis*, which means that the judgments of higher courts

are binding upon lower courts, within the same hierarchy of courts.

This is not the case in Quebec, where the principle of *stare decisis* does not apply. But even in that province it is probable that judgments of the Privy Council and Supreme Court of Canada are binding upon the provincial courts, particularly when they deal with questions arising out of Dominion legislation.

Law Enacted or Developed in Canada. The legislative field is divided between the Dominion and the provinces on the principle that matters of general or national concern, such as banks and banking, the issue of currency, militia and defence, foreign relations, the criminal law, are in the control of the Dominion, which may alone enact legislation dealing with them. In matters of a local or private nature, such as property and civil rights, local works and undertakings, education, hospitals, and asylums, within a province, the provincial legislatures have exclusive jurisdiction except in cases of great emergencies like war, when the Dominion may invade this provincial field.

This division of legislative powers leads to considerable confusion and to conflict between the Dominion and the provinces. The Canadian courts and the Privy Council are often called upon to decide whether Dominion or province has the authority in respect to some subject of legislation. There is a division of power in respect to the courts as well, but this has not caused any particular confusion or difficulty. The Dominion has

created only two courts, the Supreme Court of Canada and the Exchequer Court (which is a court of Admiralty), though it has the power to create other courts if it is deemed wise or desirable.

The Supreme Court of Canada, which sits in Ottawa, is composed of a chief justice and six puisne judges. Two of these seven judges must be from the province of Quebec. They hear cases that are brought to them on appeal from the courts in the various provinces, and their judgments are binding upon the provincial courts. They may also hear a stated case, that is, they may be required to answer questions put to them by the Governor-General in Council as to the validity of some proposed or enacted Dominion legislation. Their judgments may be reviewed by the Privy Council and if overruled are of no effect.

Each province has a complete system of courts, beginning with a Supreme Court, which has appellate and original jurisdiction, and inferior courts such as county courts, police courts, and justices of the peace. In addition, the provincial judges or courts act in a number of special capacities such as local judges in admiralty, in bankruptcy, and in divorce, and in some provinces there are special courts such as juvenile courts and women's courts. The judgments of all these courts form a body of law, within each province, of great importance for that province. For, as already stated, the principle of *stare decisis* applies, so that the judgments of the courts of superior or equal authority or



PROVINCIAL LEGISLATIVE BUILDINGS, EDMONTON, ALBERTA

Photo: Topical

jurisdiction are binding on other courts in the same province. As mentioned, this is not true of Quebec, where, in regard to the civil law at least, the judgments of the courts are of persuasive effect only, although in this way they are of great importance.

The effect of the decisions of one English law province upon the courts of another province is not very clear. But it seems that while the courts of one province will usually follow the decisions of the courts in another province if there is no equal or superior decision of its own courts on the same issue before it, it is not bound to do so. The decisions of the Quebec courts have little influence upon the courts of the English law provinces, and vice versa, except that all provincial courts have to interpret and apply Dominion legislation and, in this aspect, they do influence each other. Then, as already pointed out, the Supreme Court of Canada acts as a Court of Appeal from all the provinces, and all of its decisions, particularly on matters within the Dominion legislative competence and in the field of commercial law, are influential or binding on all provincial courts. While these provincial courts are set up and controlled by the provinces, they do interpret and give effect to Dominion laws. The judges which preside over them are all appointed and paid by the Dominion.

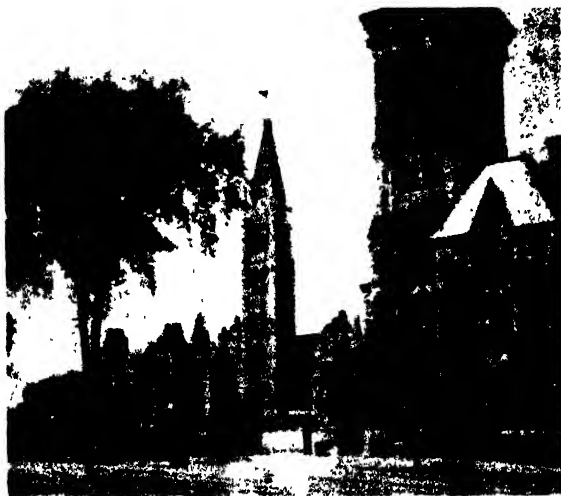
The Exchequer Court of Canada consists of a president and one puisne judge. It has a restricted jurisdiction and confines itself to hearing claims of a financial character brought by or against the Dominion Crown or Government. It also has a special jurisdiction in admiralty cases.

Influence of United States Law. The law in force in the United States has no direct effect on Canadian law, but inasmuch as conditions in the two countries are somewhat similar and the law in both is, with limited exceptions, based on English law, it has some indirect influence by reason of the

persuasive force of certain of its judicial decisions and of the borrowings that are made in the field of legislation.

Legal Education in Canada is a provincial matter and is under the control of the law societies in the provinces. These societies either co-operate with the universities in the matter of instruction and examinations or provide for a complete system of legal education under their own direction. There is a measure of reciprocity in the recognition of degrees or other qualifications between the English law provinces, but none between

these provinces and Quebec, or, for that matter, England and the United States. It is customary to divide law up into a number of heads or classes, such as contract, tort, real and personal property, criminal law, constitutional law, and so on, but this is of greater importance to the student and teacher and to those who write textbooks or treatises, than it is to the legal profession itself.



PEACE TOWER, FROM THE EAST GATE OF THE PARLIAMENT BUILDINGS AT OTTAWA

Photo. Canadian Official News Bureau

Summary. Law in Canada consists of a basis of English or French law, both common and statutory, to which has been added legislation by the legislatures of Great Britain, the Dominion, and the provinces, and the decisions of English, Dominion, and provincial courts.

The common law, which is contrasted with statutory law, is to be found in the decisions of the courts and judges, for while it is based on custom it can hardly be said to be law until it is so declared by a competent court or legislature.

The writings of experts are not law at all, but a source of law in that courts are assisted in coming to their decisions and legislatures influenced in the enactment of statutes by the writings and opinions of these individuals.

Cities, towns, municipalities, and administrative boards and tribunals all pass rules and regulations which have the effect or legislation and thus come within the definition of law, but each does so as the delegate of a provincial legislature or Dominion



COURT HOUSE AT WOODSTOCK, ONTARIO

Photo: Canadian Pacific Railway

parliament in accordance with the terms of an enabling statute.

LAWRENCE, CHARLES (1709-1760). Soldier and statesman. Born in Portsmouth, he entered the army in 1727, and served as Brigadier-General under Amherst at the Siege of Louisburg, to 1758. He had previously taken an active part in the public life of Nova Scotia, having served in the government administration since 1753. He continued to serve in various capacities until his death. The expulsion of the Acadians took place while he was Governor.

LEACOCK, STEPHEN. See article, Vol. V.

LESCARBOT, MARC. French explorer and colonist, born in France about 1570, he arrived at what is now Nova Scotia in 1606. He was a founder of Port Royal. He wrote *Histoire de la Nouvelle France* and *Muses de la Nouvelle France*.



LEGISLATIVE BUILDINGS, FREDRICTON, N.B.

Photo: Canadian National Railway

LEVIS, GASTON FRANÇOIS, CHEVALIER DE (1720-1787). Montcalm's second-in-command at the Siege of Quebec, 1759. After the Battle of the Plains he gathered an army at Montreal and in the spring of 1760 won the Battle of Ste Foye. It proved, however, to be a barren victory. He returned to France, served under Condé against Prince Ferdinand, was created a marshal in 1783, and in 1784 a duke and peer of France.

LIARD RIVER. A tributary of the Mackenzie River that rises in the Yukon, south west of Francis Lake. Its length is 550 miles. It was partly explored by John McLeod in 1834 and by Robert Campbell in 1840. Fort Simpson, of the Hudson's Bay Company, stands at its mouth, and Fort Liard at the confluence of Black River with the Liard.

LISGAR, JOHN YOUNG, BARON (1807-1876). British statesman. He filled various offices in the British Government up to 1855 and then became Lord High Commissioner of the Ionian Islands. In 1861 he was sent to New South Wales as Governor, and in 1869 became Governor of Canada.

LITERATURE. Canadian literature arose in Nova Scotia and New Brunswick immediately following the arrival of the United Empire Loyalists (which see). Twenty thousand of these exiles found new homes in Upper Canada, ten thousand in Quebec, and thirty thousand in the Maritime Provinces. Those who came into Upper Canada had little education and neither the desire nor the ability to write books. Those who left New England for Nova Scotia, however, belonged to the aristocracy of American culture. In spite of the high level of intelligence of these Loyalist settlers, however, their literary output was meagre. They were too depressed to cultivate the Muse except in melancholy lyrics or in satirical verse after the manner of Pope. It remained for a few of their children and grandchildren to produce worth-while poetry or prose.

The First Canadian Poet. Canada's first native-born poet was Oliver Goldsmith (1781-1861), grand-nephew of the author of *The Deserted Village*. Stimulated no doubt by his grand-uncle's fame, he published in 1825, in the heroic couplet, a long poem, *The Rising Village*, which he himself described as a rhymed narrative of the Loyalist migration. In his preface he compared the Odyssey of the New England exiles with the exodus from the old land to the new depicted in the latter part of *The Deserted Village*. In smoothness and correctness, this earliest Canadian poem written in English by a native author deserved the hearty praise which it received from London reviewers.

Nova Scotian Prose Writers. The names of Joseph Howe and Thomas Chandler Haliburton, two of Canada's most distinguished sons, are indissolubly connected. (See articles, Vol. IX, page 4765.)

Howe's father sailed from Boston to Halifax during the American Revolution, taking a printing press, and in 1789 founded the *Nova Scotia Magazine*. Young Howe bought and edited the *Novascotian*, which was in its day the leading newspaper in Canada. For this paper he wrote a series of essays descriptive of various districts of the province. These were published in two volumes. In his *Speeches and Public Letters*, Howe has left a mass of material which establishes his position as one of the fathers of Canadian prose.



T. C. HALIBURTON
Creator of "Sam Slick."

Much credit is due to Howe because of the encouragement he gave to his friend Haliburton, whose literary

ability was much greater than his own. Haliburton began his formal literary career in 1829 with the publication of *An Historical and Statistical Account of Nova Scotia* which, while not good history, afforded material for Longfellow's famous poem *Evangeline*.

Haliburton's fame rests on *The Clock-maker* and a whole series of humorous travel in which Sam Slick, the Yankee pedlar, amused his companion, the Squire, by "what he said, did, or invented." These sketches caught the popular fancy both in the United States and England. It has been suggested that they influenced Dickens in his creation of Sam Weller and Pickwick. Artemus Ward characterized Haliburton as "the father of American humour." Mark Twain, who read him eagerly, was very deeply indebted to him. Haliburton's books have gone through numerous editions, and some of his Sam Slick sayings continue to be quoted to-day. Sam Slick is undoubtedly the most widely known character creation in Canadian literature.

Another Nova Scotian who influenced Mark Twain and American humour in general was James De Mille, a prolific writer of stories. *The Young Dodge Club Series* suggested by his travels in Italy, was followed by his comic novel of adventure, *The Dodge Club* (1869). The latter appeared first as a serial in *Harper's Magazine* in

1868, thus being a precursor of Mark Twain's *The Innocents Abroad*.

Canada's First Novelist. But if Canadian poetry and humour were born in Nova Scotia, to Ontario belongs the honour of having produced the first Canadian novelist. This was John Richardson (1797-1852), born near Niagara Falls. His father was an army surgeon and his mother's father was a Colonel John Erskine, who led an expedition from Albany to the relief of the garrison when Detroit was besieged by Pontiac and his Indian confederates. It was from his grandfather that in later years Richardson, who in his youth fought in the War of 1812-1814, obtained the facts which he worked into his story *Wacousta*. This is the only novel of a series of stories by Richardson which has survived to this day. It was first published in 1832, had a moderate success, but has appeared in a number of editions during the last thirty years. In 1923 two editions were brought out. Richardson, whose *History of the War of 1812* is the authority on that subject, was not encouraged by the reading public of his day. He drifted to New York in 1849 and died in want there three years later.

Pre-Confederation Native Poets. There was a gap of twenty-four years between the publication of *Wacousta* (1832) and *The St. Lawrence and the Saguenay and Other Poems* (1856), by Charles Sangster (1822-1893). The paucity and unimportance of verse production in Upper Canada during this long stretch when the primeval forest was being attacked by pioneer settlers is seen in the fact that Sangster was called "the father of Canadian poetry" by contemporaries who had never heard of the Nova Scotian, Goldsmith. The Kingston poet wrote two volumes of verse. Like his maritime forerunner, he had an eye for local colour and, in making descriptive poems which featured the romantic beauty of lake, forest and river, he exerted a marked influence upon later poets.

It was while Sangster, still in his prime, was proof-reader on the staff of the *Kingston Whig* that he read some of the early poems of Charles Mair who, in 1865, was a student at Queen's University.

Sangster encouraged Mair to continue his literary work, and his first volume, *Dreamland and Other Poems*, was published in 1867, the year of Confederation. Mair's dramatic poem *Tecumseh* (1886) lives to-day by reason of its vivid presentation of the character of the famous Indian ally of the British in the War of 1812. It is written in dignified blank verse. This early poet's nature lyrics are occasionally tuneful, but are on the whole rather insipid.

The Emigré Poets. The year after Sangster published his first book of verse, Charles

Heavysege who was the first singer of importance among the pre-Confederation group of *émigré* poets, published what an English reviewer declared was one of the greatest poems ever written outside of Great Britain. This was *Saul*, a long dramatic poem, very didactic, but perhaps for that reason in favour in an age that was partial to Biblical subjects. See HEAVYSEGE, C., Vol. IX, page 4765.

In addition to Heavysege, three pre-Confederation men and one woman are worthy



BIRTHPLACE OF SIR CHARLES ROBERTS
The Rectory, Fredericton, New Brunswick.

of mention. The first of these is Thomas D'Arcy McGee. A study of his *Canadian Ballads and Occasional Verses* (1855) shows that he wielded a more brilliant pen than any of his contemporaries. He strongly supported Canadian nationalism and became one of the Fathers of Confederation. His Celtic fire and poetic style made him a power in election campaigns. See MCGEE, T. D'A., Vol. IX, page 4780.

Alexander McLachlan came to Canada from Scotland in 1840. His first book of poems, *Lyrics*, written in broad Scots, was published in 1858. He lived for many years on a little farm in western Ontario and down to old age continued to write verse, which while not of a high quality, pictured the life of the period simply and vividly. McLachlan is known as "the Canadian Burns."

A woman who experienced the hardships

of a settler's life in the woods of Upper Canada and reacted to them courageously, even joyously, was Susanna Moodie (1803-1885). She and her husband, a half-pay officer of the British army, settled on a bush farm north of Peterborough in 1832. All Canadian anthologies include poems which she originally contributed to contemporary periodicals. They are descriptive of pioneering life. Her prose work, *Roughing It in the Bush*, has gone through numerous editions. It is the best memorial ever written of the life of which it treats.

The author of what is generally regarded as one of the best Canadian historical novels was also an *émigré* author who was born in England, but entered Canada in 1839, after seven years' residence in the United States. William Kirby (1817-1906) has been called the last of the United Empire Loyalists. His best book is *The Golden Dog* (1877), a novel of Quebec city in the days of the old regime. In character portrayal, dramatic incident, and romantic atmosphere, this historical novel represents the highest achievement of any Canadian writer of fiction up to the appearance of *Pierre and His People* (1892), by Gilbert Parker.

The Great Poets. The golden age lies between 1880 and 1898. In that period as many as ten poets of merit, several with real genius, published their volumes. The following list shows this bright succession: Charles G. D. Roberts, *Orion and Other Poems* (1880); Isabella Valancy Crawford, *Spookses' Pass, Malcolm's Katie and Other Poems* (1884); Archibald Lampman, *Among the Millet, and Other Poems* (1888); Frederick George Scott, *The Soul's Quest, and Other Poems* (1888); William Wilfred Campbell, *Lake Lyrics, and Other Poems* (1889); S. Frances Harrison, *Pine, Rose, and Fleur-de-lis* (1891); Bliss Carman, *Low Tide on Grand Pré* (1893); Duncan Campbell Scott, *The Magic House, and Other Poems* (1893); Pauline Johnson, *The White Wampum* (1894); William Henry Drummond, *The Habitant, and Other French-Canadian Poems* (1898).

Sir Charles Roberts, dean of Canadian poets, was knighted in 1935 in token of his distinguished work in poetry and prose. Bliss Carman, styled by his fellow craftsmen as "Canada's Laureate," produced many volumes of melodious lyrics. Lampman, noted for the tranquil loveliness of his nature poems is considered by many critics to be the most thoughtful, the most delicate phrase-maker among Canadian singers. These three poets are assuredly the greatest lyric writers and, strange to say, all three came of Loyalist stock.

William Wilfred Campbell and Frederick Scott, ardent Imperialists, have written many

stirring patriotic poems. The poetry of Duncan Campbell Scott shows a mastery of technique; in subject-matter he has revealed a special interest in Indian life and legend. Pauline Johnson holds a unique place because of her Indian blood; she has written of her father's people with passionate admiration. Drummond also has a distinctive niche



PAULINE JOHNSON MEMORIAL, STANLEY PARK, VANCOUVER

in the hall of literary fame because he has described in inimitable, often humorous, verse the joys and sorrows of the French Canadian habitant. Drummond and Robert Service, a younger writer, author of *Songs of a Sourdough* (1907) and *Ballads of a Cheechako* (1909), are the most popular of Canadian poets; each of them opened up a new field, rich in human feeling, and their close observation of the humours of the French Canadian village and the mining camp of the Klondike has appealed to hundreds of thousands of readers to whom academic poetry is anathema.



PETER MCARTHUR
Humorist of the farm.

The Canadian Mark Twain. While Service, a British-born bank clerk in Dawson City, swept to fame and fortune on his lively, humorous verse, the same destiny was enjoyed by a Toronto teacher, Stephen Leacock (see article, Vol. V), who in 1910 published his *Literary Lapses*. He became a professor of political

economy, but he never allowed political science to depress him. For many years he has been a favourite humorist with American and English readers. *Hellements of Hickonomics* (1936), a volume which he des-

cribes as "hiccoughs of verse done in our social planning mill," is the latest work of the Montreal Mark Twain.

In this connection mention should be made of another Canadian humorist, Peter McArthur (1866-1924), who was equally at home in verse or prose. He found plenty of amusing phases and incidents in Ontario farm life, as his two volumes *In Pastures Green* (1915) and *The Red Cow and Her Friends* (1919) abundantly testify.

Increase in Literary Activity. In the 'nineties of the last century there was a steady increase in literary production in Canada. From 1900 to 1914 publishers showed such courage that many young writers saw themselves in print. Although the hard times of recent years reduced publication of books by native writers, the post-War period has revealed intense literary activity throughout Canada. In various cities the yearly brochures published under the auspices of the branches of the Canadian Authors' Association, which was founded in Montreal in 1921, largely owing to the enthusiasm of J. Murray Gibbon, indicate the promising array of talent throughout Canada. The recent appearance of the *Canadian Poetry Magazine* also shows that the whole Dominion is vocal with song.

Marjorie Pickthall (1883-1922) was the greatest Canadian woman poet of her day, or who in imagery and music approached genius. Isabel Ecclestone Mackay (1875-1928), maker of excellent verse for children, was also a dramatist of remarkable skill. She and Miss Pickthall, lived in Vancouver and were intimate friends. A third Vancouver poet with a national reputation, still happily living, is Annie Charlotte Dalton.



JOHN MURRAY GIBBON
Founder of the Canadian Authors' Association.



ISABEL ECCLESTONE
MACKAY
Novelist, dramatist, and poet.

Mrs. J. W. Garvin (Katherine Hale) writes good verse and descriptive prose. John McCrae (see article) wrote "In Flanders Fields," the best Canadian lyric of the World War. Robert Stead, poet and novelist, contributed several stirring lyrics to the literature of the War. J. Murray

1907 as the author of *Black Rock*, a tale of a Presbyterian missionary in the Far West, no Canadian novelist made a fortune out of his pen. But Gordon, born in 1860, and Sir Gilbert Parker (see article, Vol. VI), two years younger than Gordon, saw their stories published in huge editions in Toronto, New York, and London.

Ralph Connor's stories have been translated into several languages. No Canadian prose writer has had such a wide circulation or such long-continued success as this romancer of the "last great West." *The Sky Pilot* and *Glengarry School Days* are probably his most popular stories. Of late years he has written novels based on Canadian and American history. Gilbert Parker's best stories are *The Seats of the Mighty* and *When Valmond Came to Pontiac*, both with a French Canadian background. Lucy Montgomery, a popular novelist, laid the scenes of her "Anne" stories in Prince Edward Island. Robert J. C. Stead, Arthur Stringer, Robert Watson, Nellie McClung, Frederick Philip Grove, Laura Salverson, Bertrand Sinclair, Robert Allison Hood, and Frederick Niven have followed Gordon as interpreters of Western life in stories that have been warmly received by Canadian and American readers. Mazo de la Roche's "Jalna" series of novels depict Ontario country life vividly. Norman Duncan and Frederick Wallace have written vigorously of the "Bluenose" sea captains and sailors and fishermen of the Eastern coast. In comparison with the leading poets, Canadian novelists must be described as second best in point of finish of style.

Open-Air Writers.

Among hundreds of writers in other less popular fields, mention should be made of nature-lovers like Charles G. D. Roberts, Arthur Hening, Archie McKishnie, S. T. Wood, W. H. Blake, Ernest Thompson Seton, W. A. Fraser, and Marshall Saunders. Sir Charles Roberts is the father of the modern animal story. He was writing stories of animals long before Kipling wrote the *Jungle Book*, and, so accurate are his studies of wild life, so charming his accounts of the adventures of the animals he describes, that it is possible



Standing. Isabel Ecclestone Mackay (1875-1928) "maker of excellent verse for children," and Robert Allison Hood, interpreter of Western life

Seated: Robert Watson, another distinguished writer on Western themes, and Marjorie Pickthall (1883-1922), a poet "whose imagery and music approach genius"

Gibbon has done a great service to the two leading races in Canada by translating into English the chansons, the folk-songs of the French Canadians. Watson Kirkconnell has done the same thing for Icelanders, Poles, Hungarians, and other foreign-born poets of Canada. Poets who have begun most promising careers during the post War period are Edwin J. Pratt, Wilson MacDonald, Lloyd Roberts, A. M. Stephen, Nathaniel Benson, and Audrey Alexandra Brown. The last-mentioned, author of *The Dryad of Nanaimo* (1931), although unequal in style, is a poet of imaginative power, colour, and distinction.

Important Novelists. Before the advent of Charles W. Gordon (Ralph Connor) in



ARTHUR HENING
Nature lover and writer of
"open air" subjects

his short stories in this field may outlive his poetry.

Another literary zone which has a large and fascinating storehouse of reading is that of exploration, discovery, and trade with savage tribes. From the days of the Jesuit Relations to the present, hundreds of volumes written either by adventurers themselves or based upon their journals and diaries have contributed to this treasure-trove of romance. Volumes in which the Odysseys of Canadian history have been ably summed up and described are *The Search for*

the Western Sea by Lawrence J. Burpee, *By Star and Compass* by W. S. Wallace, *Pathfinders of the West* by Agnes Laut, and *Fur Traders of the Far West* by Alexander Ross.



AGNES LAUT

Author of one of the "Odysseys of Canadian history"

The Field of History. Extensive work has also been done in the direct field of history by such writers as

William Kingsford, W. I. Grant, Lawrence J. Burpee, W. P. M. Kennedy, D. C. Harvey, Chester Martin, G. M. Wrong, George H. Locke, H. H. Langton, A. G. Doughty, Adam Shortt, Charles G. D. Roberts, W. S. Wallace, Marius Barbeau, Sir John Bourinot, A. G. Bradley, l'Abbé Casgrain, John C. Dent, Beckles Willson, M. O. Hammond, R. G. MacBeth, and Alexander Begg.

General works are the following: *Encyclopedia of Canadian History* by Lawrence J. Burpee; *Makers of Canadian Literature*, edited by Lorne Pierce; *Dictionary of Canadian Biography* by W. Stewart Wallace; *Steel of Empire* by J. Murray Gibbon; *Canada and Its Provinces*, *Chronicles of Canada*, and *Makers of Canada* are series that run into many volumes written by various authorities. The Champlain Society and the Radisson Society Publications furnish abundant material for the future Parkmans and Macaulays of Canada.

French Canada's Contribution. While Oliver Goldsmith is the first native-born poet of English-speaking Canada, a similar proud place belongs to Michel Bibaud (1782-1857) in the history of French-Canadian letters. He has also the honour to be the first historian of Canada. He modestly but correctly described himself as more of a rhymist than a poet and his history was much too favourable to the English in dealing with the constitutional struggle between the Conquest and the Rebellion of 1837 to be acceptable to his

compatriots. It was François Xavier Garneau who produced between 1845 and 1848 a history of Canada which stirred the pride of French Canadians and was so important in its literary influence that it inspired a school of poets which flourished in Quebec city during the 'sixties of the last century. Their organ of expression was a magazine entitled *Les Soirées Canadiennes*. The contributors to this publication used to meet in the bookstore of the Crémazie brothers. Octave Crémazie, under the influence of Garneau and other members of his coterie, blossomed as a poet. His best-known poems are *Promenade de Trois Morts* and *Le Drapeau de Carillon*.

A greater than Crémazie was his disciple, Louis Fréchette (1839-1903), acclaimed by his own countrymen as their national poet. Three of his volumes of verse, *La Légende d'un Peuple* (1887), *Les Fleurs Boreales* and *Les Oiseaux de Neige* (1880), were crowned by the French Academy in 1880.

Three of the best-known French Canadian novelists are Joseph Marmette, Felcité Aygers (Laure Conan), and Philippe Aubert de Gaspé (1786-1871) whose historical romance *Les Anciens Canadiens* is one of the few French Canadian stories translated into English.

It seems strange that creative literary effort flowered so late in the old city of Montreal. It was not until the gay 'nineties that anything distinctive was produced there and when it did appear it was in decided contrast to the romantic Victor Hugo style of the Quebec school. Some forty young writers of Montreal organized a circle which met weekly in the Château de Ramezay. Verse writers of this school whose work has been published in book form are Émile Nelligan, Albert Lozeau, and Paul Morin. Professor MacMechan declares that the poetry of these three writers is "a greater glory to Montreal than her fifty millionaires." In 1923 Morin was awarded a prize of \$2000 by Quebec province.

Other French Canadian literary leaders during the post War period include Victor Morin, Louvigny de Montigny, Anne Marie Huguenin, Henri Bourassa, Hector Garneau, Georges Pelletier, Omer Heroux, and Olivier Asselin.

LOGAN, MOUNT. See article, Vol. V.

LOGAN, SIR WILLIAM EDMOND (1798-1875). Geologist. Born in Montreal, he became, in 1842, the first Director of the Geological Survey of Canada, retiring in 1870. Mount Logan, near the southern end of the boundary between the Yukon Territory and Alaska, was named after him.

LONDON. A city of Ontario, founded by Peter McGregor, a Highland Scotsman, in

1826. Like its famous namesake it stands on the banks of the Thames and in Middlesex County. It was incorporated as a village in 1840, as a town in 1848, and as a city in 1854. It was the western terminus of one of the famous early roads of Upper Canada, known as Dundas Street.

It is the seat of the University of Western Ontario. The city is the distributing point for an important farming district, and has a number of diversified industries, including iron and brass foundries. Population, 71,148 (1931).

LONGUEUIL, CHARLES LE MOYNE, SIEUR DE (1626-1685). French Canadian leader. He entered Canada in 1641, and he was granted the seigniorship of Longueuil in 1657. He was sent in 1682 as an ambassador to the Iroquois, with whom he had great influence.

LONGUEUIL, CHARLES LE MOYNE, BARON DE (1657-1729). Governor of Three Rivers, 1720-1724, and Governor of Montreal, 1724-1729. Sieur d'Iberville was his brother. He administered the colony in 1725 before the arrival of Beauharnois.

LONGUEUIL, CHARLES LE MOYNE, BARON DE (1687-1755). Soldier. He led an expedition from Canada to Louisiana in 1730 to help his uncle, Bienville, in his conflicts with the Chickasaw Indians.

LOUISBURG. A seaport and fortress on the south-east coast of Cape Breton. The fort, named after Louis XIV, was begun in 1720, took twenty-five years to build, and cost 30,000,000 livres. It was captured by the British, under Pepperell and Warren in 1745; ceded back to France by the Treaty of Aix la Chapelle; and again captured by the British, under Amherst, Wolfe, and Boscaawen, in 1758. The ruins are preserved as an historical monument.

LUNDY'S LANE, BATTLE OF. A battle in the war of 1812-1814. It took place on 25th July, 1814. General Brown, with about 4000 American troops, advancing down the Niagara with part of his force, came in contact with the advance guard of the British, under Pierson. Sir George Drummond brought up reinforcements and, although the odds fluctuated throughout the day, the two forces were approximately equal. The fight continued far into the night. About midnight the Americans retreated, leaving Drummond master of the field.

MCCRACKEN, JOHN (1872-1918). Physician and poet. Born at Guelph, Ontario. He served as a medical officer in the World War. In 1915 there was published in *Punch* his famous poem entitled, "In Flanders Fields." This and other poems were collected and published after his death.

MACDONALD, SIR JOHN ALEXANDER. See article, Vol. V.

MACDONALD, JOHN SANDFIELD. See article, Vol. V.

MACDONALD, SIR WILLIAM CHRISTOPHER (1831-1917). Tobacco manufacturer and philanthropist. Born in Prince Edward Island, he made a large fortune in business in Montreal and devoted most of it to the promotion of education. To McGill University he gave over £1,000,000, and to the Agricultural College at Ste Anne a similar sum.

MCGEE, THOMAS D'ARCY (1825-1868). Writer and statesman, born in Ireland, he went to Canada in 1857 by way of the United States. He worked with Macdonald, Cartier, and other leaders to bring about Confederation. He represented the Irish element in Parliament and was one of the most brilliant speakers in the House of Commons. He was killed by a Fenian in Ottawa.

MACHRAY, ROBERT (1831-1904). Church of England Bishop, born in Aberdeen, Scotland. In 1865 he was sent to America as Bishop of Rupert's Land and had much to do with the development of missions in Western Canada. In 1875 he was elected Metropolitan and in 1893 became Archbishop of Rupert's Land and Primate of all Canada.

MACKENZIE, ALEXANDER. See article, Vol. V.

MACKENZIE, SIR ALEXANDER. See article, Vol. V.

MCKENZIE, ROBERT TAIT (born 1867). Professor of physical education and sculptor born at Almonte, Ontario. He was educated at McGill University, and taught physical education there until 1904, when he joined the faculty of the University of Pennsylvania. His sculpture has been exhibited at the Royal Academy in London and at the Salon in Paris, and is found in the Metropolitan Museum in New York and in the Canadian National Gallery in Ottawa.

MACKENZIE, WILLIAM LYON (1795-1861). Reformer and statesman, born in Scotland. He went to Upper Canada in 1820 and in 1824 established the *Colonial Advocate*, which he used to urge the importance of constitutional reform. He entered the assembly of Upper Canada in 1828, and at once took an active part in opposition to the Tory group known as the Family Compact. Expelled from the assembly, he was re-elected, and again expelled. Becoming more bitter, he organized a rebellion in 1837, about the same time as Papineau's in the neighbouring French province. It was even less successful, and Mackenzie fled to the United States, where he remained in exile until 1849. For a time he was on Horace Greeley's *New York Tribune*. After his return to Canada, he again sat in the

assembly from 1851 to 1858. He wrote *Sketches of Canada and the United States* as well as lives of Van Buren and Butler.

MACKENZIE RIVER. See article, Vol. V.

McLENNAN, Sir JOHN CUNNING (1867-1935). Scientist, born in Ingersoll, Ontario.



SIR JOHN McLENNAN

He was Professor of Physics in the University of Toronto for about a quarter of a century. He became famous by reason of his researches in radioactivity and the liquefaction of helium and other gases. He was a fellow of the Royal Society of London and had been president of the Royal Society of Canada.

He was a scientific adviser to the British Admiralty during the World War.

MAGDALEN ISLANDS. A group of islands in the Gulf of St. Lawrence. It is probable that they were first seen by Jacques Cartier, in 1534. Champlain named them Isles de Madeleine. The group was annexed to Newfoundland in 1763 and transferred to Quebec in 1774.

MAIR, CHARLES (1840-1927). Poet and journalist, born in Lanark, Ontario. He went West to the Red River Settlement, was captured by Riel in the first rebellion, 1869, and served with the troops in the second, 1885. See LITERATURE, Vol. IX, page 4774.

MAISONNEUVE, PAUL DE CHOMEDY DE (1612-1676). French soldier and colonial governor, generally regarded as the founder of the city of Montreal. He went to Canada in 1641, and in May of the following year went up the river from Quebec to the island discovered by Jacques Cartier, where he and his men built a chapel and a fort together with a number of dwellings, surrounded by a wall. He was governor of Montreal for twenty-two years. Parkman calls him "a devout and valiant gentleman."

MANITOBA. See article, Vol. V.

MANITOBA, LAKE. See MANITOBA, Vol. V.

MANITOULIN ISLAND. An island 80 miles long and about 28 miles wide, largest of an archipelago on the north side of Lake Huron. The name is derived from an Indian word meaning Great Spirit and was familiar to explorers and fur traders from the middle of the seventeenth century.

MANUFACTURES AND INDUSTRIES. The type of manufactures established in a new country is largely determined, especi-

ally where transport charges are high, by the raw materials available in that country. Early manufactures in Canada were necessarily connected with the satisfaction of the primary needs for food, clothing, and shelter. A census of occupations taken in 1681 enumerated a comparatively large number of tailors, shoemakers, masons, carpenters, gunsmiths, and edged-tool makers.

Development of Manufactures. The development of manufactures in Canada was influenced by two major events. The first of these was the boom accompanying the opening of the West which greatly increased the demand for manufactured goods of all kinds, especially construction materials. The second event was the World War, which tended to promote not only the diversification of products but also the production at home of many commodities which had previously been imported. On account of the practical suspension of the importation of manufactured goods of many kinds from Europe, enterprising Canadian manufacturers were given opportunities of entering upon new lines of manufacture with a practical monopoly of the market. Added to this there was the reflex effect of the great prosperity of agriculture produced by unprecedented wartime prices. Industry worked at high pressure, not only to produce munitions and military supplies for the armies of the Allies, but also to make the many kinds of goods required for the stimulated civilian consumption. Mainly due to these causes, the Dominion assumed a new position as one of the leading manufacturing countries of the world. Canada to-day is a leading exporter in many manufactured products. It is first in the export of newsprint, second in flour, third in automobiles, and fourth in rubber tyres. It also ranks high in the export of whisky, farm implements, and rubber footwear.

The tremendous increase in manufacturing production reached its height in the summer of 1920, with a gross value of products not exceeded until 1929. Values in 1929 reached a higher point than in the post War boom of 1920, although the prices of manufactured goods had dropped about 41 per cent in the intervening period. This steady expansion was, however, halted by the world wide recession which set in toward the end of 1929. This downward trend continued until the middle of 1933. From then on, the rise in manufacturing production gained momentum. In 1934 there were 25,663 establishments with a capital investment of nearly \$5,000,000,000 and a production valued at over \$2,500,000,000. The number of persons employed totalled 345,162.

Canada has an abundance of the raw

materials necessary for production. Farms, forests, and mines have contributed. In spite of the plentiful raw materials at home, some must be imported. However, the major part used is obtained in Canada. Approximately 39 per cent of the materials used in manufactures are of domestic farm origin; 12 per cent of foreign farm origin; 24 per cent of domestic and foreign mineral origin; and 17 per cent of domestic and foreign forest origin.

Although Canada is rich in mineral resources, the iron and steel and the coal used in manufacturing are in the main imported from the United States. This is chiefly



LOCAL INDUSTRY

Selling hand woven carpets at St. Anne's Road, Quebec.

Photo: Canadian National Railway

because the principal manufacturing centres of Canada in the St. Lawrence and Great Lakes regions are conveniently situated with regard to the coal and iron supplies of the United States and remote from the coal and iron of the Maritime Provinces. In recent years the shortage of coal has been made up for by the increasing use of electric power, while the bulk of the pig iron used in Canadian manufactures is now made in domestic blast furnaces.

Manufactures According to Purpose of Products. The food products group, valued at over \$579,000,000, occupies the premier position as regards production. This is followed by the miscellaneous industries group, wood and paper products, clothing, iron and its products, vehicles and vessels, primary textiles, central electric stations, chemicals, and drink and tobacco.

In employment the ranking of the groups is somewhat different. Wood and paper products with 115,563 employees comes first, followed in the order named by clothing, food, miscellaneous industries, iron and its products, and primary textiles.

NUMBER OF ESTABLISHMENTS AND GROSS VALUE OF PRODUCTION OF THE MANUFACTURING INDUSTRIES OF CANADA BY MAIN GROUPS, 1934

Groups	No. of Establishments	Gross Value of Products in Dollars
Food	8871	579,314,257
Drink and tobacco	680	106,791,466
Clothing	2413	236,028,354
Primary textiles	326	138,715,306
Vehicles and vessels	547	175,812,392
Wood and paper products	7737	402,577,125
Iron and its products	1143	196,783,571
Chemical products	736	108,052,039
Central electric stations	1043	124,463,613
Miscellaneous industries	2167	465,220,831
TOTAL	25,663	2,533,758,954

Some significant changes have occurred since 1922 in the importance of the various groups shown in the table above. The food group, although maintaining its lead dropped. The wood and paper group, and the iron and its products group also declined. The clothing, drink, and tobacco groups retained the same percentage. Primary textiles, vehicles and vessels, chemicals, central electric stations, and miscellaneous industries all bettered their position. The greatest gain was registered by the miscellaneous group, where are found many of the industries engaged in the production of producers' materials and industrial equipment. This change indicates the increasing industrialization of the Dominion.

Leading Industries. The production of pulp and paper is a comparatively recent development in Canadian industry. In 1881 there were only thirty-six paper and five pulp mills in operation. By 1923 this industry had displaced flour milling as the leading industry, a position held ever since. The peak of production was reached in 1929 when 4,021,000 tons of wood pulp and 3,197,000 tons of paper were produced. In 1926, Canada for the first time produced more newsprint than the United States and became the world's chief producer and exporter of that commodity. Despite decreases in production it has been able to maintain that position. In 1934 this industry produced 3,636,335 tons of pulp and 3,069,516 tons of paper; newsprint amounted to 2,604,973 tons, more than two and one half times the production of the United States.

Smelting and refining of non-ferrous metals is also a recent development. From 1925 to 1934 there was an increase of 165 per cent in the value of production. This industry rose from fourteenth place in 1925 to second place in 1934.



METALLURGICAL PLANT AT TRAIL, BRITISH COLUMBIA

Photo: Canadian Official News Bureau

The generation of power by central electric stations, which is of such vital importance to the development of manufactures in Canada, has increased rapidly since the World War. From an output of 5,500,000,000 kilowatt hours in 1919 production reached a new high record of 21,200,000,000 kilowatt hours in 1934.

Slaughtering and meat packing is important to the agricultural economy of the Dominion. The packing plants are concentrated in the larger centres of population, and are in all provinces. Toronto is the chief centre, while Montreal, Winnipeg, St. Boniface, Edmonton, and Vancouver are also of importance. This industry is the largest in the food group. Packing-house products contribute materially to the foreign trade of Canada.

Flour and feed milling is the second largest industry in the food group. This industry, which has existed to meet the domestic needs for more than 300 years, is one of the Dominion's oldest manufactures, but it is only within recent times that its progress has become spectacular. The War and the demand it created gave the industry a great impetus. More than 400 flour mills, many of them of the most modern type and highest efficiency, have a capacity far in excess of Canada's demands. During 1928, productive capacity reached about 121,000 barrels per day. Since then, the industry has been affected by the difficulties which beset the Canadian grain trade and the

decline in the prices of grains. Canada continues, however, to be one of the leading exporters of wheat flour.

The butter and cheese industry has been important for many years. Originating in the agricultural districts of the Maritime Provinces, the Eastern Townships of Quebec, and the southern counties of Ontario, it is now rapidly developing in the Prairie Provinces and in the more recently established settlements in northern Quebec and northern Ontario. For so large an industry, it is unique in having shown little tendency toward consolidation into large units.

The Dominion produces some crude oil, but the bulk of the oil treated in Canadian refineries is imported from the United States and South America. In 1934 there were fifty-one refineries operating across the Dominion. These plants used 1,109,510,343 gallons of crude oil, and in that year produced commodities worth \$76,337,513.

Sixteen companies operating twenty-one plants manufactured or assembled motor cars in Canada in 1934. Foreign markets are important to the existence of this industry. Exports of automobiles and parts reached a total of \$47,000,000 in 1929. The drop in the exports to \$7,000,000 in 1932 was, therefore, an important factor in the reduced output during the depression years. During the past few years, however, due to the expanding home market and increased exports, the output of cars has gone up.

The production of cotton yarn and cloth

is another industry dependent mainly on foreign sources for the supply of its raw materials. The output increased during the past decade, but Canada still imports large quantities of cotton textiles.

With the increase in urban population, as well as the improvement in the means of transportation, which increasingly enables rural communities to purchase factory-made bread, the baking industry made rapid strides during the past decade. At the present time, the production of bread and other bakery products requires the labour of nearly 19,000 people.

LEADING MANUFACTURING INDUSTRIES OF CANADA, 1934

Industry	No. of Establishments	Gross Value of Products in Dollars
1. Pulp and paper	95	152,647,756
2. Non-ferrous metal smelting and refining	15	149,936,239
3. Central electric stations	1043	124,463,613
4. Slaughtering and meat packing	147	122,112,406
5. Flour and feed mills	1310	95,746,183
6. Butter and cheese	2632	92,813,271
7. Petroleum products	51	76,337,513
8. Automobiles	21	76,133,448
9. Cotton yarn and cloth	36	61,306,490
10. Bread and other bakery products	3173	57,495,522
11. Rubber goods, including footwear	51	55,100,381
12. Sawmills	3572	54,819,071
13. Printing and publishing	790	52,681,607
14. Clothing, factory, women's	577	51,533,091
15. Electrical apparatus and supplies	174	50,234,811
16. Hosiery and knitted goods	167	44,957,047
17. Biscuits, confectionery, cocoa, etc.	237	40,076,917
18. Coke and gas products	44	38,272,020
19. Tobacco, cigars, and cigarettes	127	37,489,025
20. Breweries	73	36,355,198
21. Sugar refineries	8	36,007,408
22. Fruit and vegetable preparations	287	35,330,577
23. Castings and forgings	337	35,128,086
24. Railway rolling stock	37	34,352,911
25. Clothing, factory, men's	165	33,731,740
TOTAL, TWENTY-FIVE LEADING INDUSTRIES	15,169	1,644,992,131
TOTAL, ALL INDUSTRIES	25,663	2,533,758,954
PERCENTAGE OF LEADING INDUSTRIES TO ALL INDUSTRIES	59	64

Geographical Distribution of Industries.
Distribution by Provinces. Ontario, with about 50 per cent of the total production, is the most important manufacturing province in the Dominion. This favourable

position is not of recent growth, but has been maintained over a long period of years.

Ontario also has the greatest diversification of manufacturing production of any province. Outstanding among the industries in which the province of Ontario leads is that of automobile manufacturing, which is carried on practically in this province alone. Other important industries in which Ontario led in 1934 were: agricultural implements, leather tanneries, rubber goods, furniture, fruit and vegetable preparations, electrical apparatus and supplies, castings and forgings, primary iron and steel, flour and feed mills, and hosiery and knitted goods.

Quebec ranks second with about 30 per cent of the Dominion total. The production of pulp and paper is dominant. Other leading industries are: central electric stations, cotton yarn and cloth; non-ferrous metal smelting and refining; tobacco, cigars, and cigarettes; and women's factory clothing. Pulp and paper, in addition to supplying about 10 per cent of the gross value of Quebec manufactures, furnish about 40 per cent of the Dominion total for this industry. Quebec is outstanding in manufacturing more on account of its large individual industries than because of the diversification of industrial activities.

British Columbia, in third place, produces about 7 per cent of the total production for Canada. Forest products industries account for about 24 per cent of the provincial total, and fish curing and packing for 9 per cent. The leading industries are: sawmills, fish curing and packing, pulp and paper, central electric stations, petroleum products, and slaughtering and meat packing.

NUMBER OF ESTABLISHMENTS AND GROSS VALUE OF PRODUCTION OF THE MANUFACTURING INDUSTRIES OF CANADA, BY PROVINCES, 1934

Province	No. of Establishments	Gross Value of Products in Dollars
Prince Edward Island	273	3,302,580
Nova Scotia	1386	60,844,581
New Brunswick	847	54,057,847
Quebec	8168	766,408,000
Ontario	10,322	1,255,325,701
Manitoba	1077	105,348,000
Saskatchewan	845	42,261,123
Alberta	968	69,389,118
British Columbia	1777	176,721,398
CANADA	25,663	2,533,758,954

The Prairie Provinces as a unit contribute about 9 per cent of the Dominion total production. Slaughtering and meat packing, flour and feed mills, butter and cheese,



MANUFACTURES AND INDUSTRIES

1. Copper mine. From 1925 to 1935 production of non-ferrous metals increased 165 per cent in value.
2. Top portion of vacuum evaporators at the Windsor Salt Works, Ontario.
3. Coast Salish woman weaving a blanket from the wool of the wild mountain goat.
4. Modern carpet weaving plant.
5. Cellophane stored in rolls for shipment.
6. Oil tanks at a refinery. There were fifty-one refineries in 1934, but most crude oil was imported.
7. Milling engine blocks. Twenty-one plants manufactured or assembled cars in 1934.
8. Tomatoes arriving at a cannery. Fruit and vegetable preparations rank among the leading industries.

Photos: Canadian Government; Canadian Industries Ltd.; McColl-Frontenac Oil Co. Ltd.; Canadian Pacific Railway

petroleum products, central electric stations, and railway rolling stock are the leading industries.

In the Maritime Provinces, the pulp and paper industry, sugar refining, fish curing and packing, central electric stations, and primary iron and steel are the five leading industries.

LEADING MANUFACTURING CITIES OF CANADA, 1933¹

City	No. of Establishments	Gross Value of Products in Dollars
Toronto, Ontario	2604	308,983,639
Montreal, Quebec	2226	300,636,197
Hamilton, Ontario	469	83,530,255
Winnipeg, Manitoba	600	59,287,280
Vancouver, British Columbia	746	55,160,883
Montreal East, Quebec	11	41,023,558
London, Ontario	242	29,468,324
Kitchener, Ontario	140	25,549,350
Quebec, Quebec	301	25,171,550
Port Colborne, Ontario	18	23,924,038
Sarnia, Ontario	44	19,488,338
Calgary, Alberta	161	19,338,857
Oshawa, Ontario	43	19,211,259
Ottawa, Ontario	233	18,247,024
Walkerville, Ontario	66	17,808,274
Three Rivers, Quebec	56	16,497,480
East Windsor, Ontario	11	16,078,617
Peterborough, Ontario	78	16,051,702
Edmonton, Alberta	158	14,627,228
St. Boniface, Manitoba	42	14,449,005
Brantford, Ontario	99	14,215,285
St. John, New Brunswick	131	13,712,819
New Toronto, Ontario	19	12,999,938
Windsor, Ontario	161	12,529,031
Cornwall, Ontario	40	12,051,940
Dartmouth, Nova Scotia	13	11,540,508
Drummondville, Quebec	27	11,400,586
Niagara Falls, Ontario	57	11,321,234
St. Catharines, Ontario	91	10,104,955
Regina, Saskatchewan	99	10,101,268

¹ The above figures do not include central electric stations.

Distribution by Cities. Manufacturing industries are concentrated more or less in a few localities, including Western Ontario, Greater Toronto, Greater Montreal, and the Eastern Townships in the province of Quebec. The Maritime Provinces also contain a few important industrial areas. In the Prairie Provinces production is confined chiefly to the larger centres of population. Toronto is the leading manufacturing centre, followed closely by Montreal. Greater Montreal as a unit, however, exceeds Greater Toronto by a substantial margin. Other important centres are: Hamilton, Winnipeg, Vancouver, Montreal East, London, Kitchener, Quebec, and Port Colborne.

In the table above are given all manufacturing centres with a production of \$10,000,000 or over.

MEDLEY, JOHN (1804-1892). Church of England bishop, born in England. He went to Canada in 1845 as the first bishop of Fredericton, New Brunswick. In 1879 he was elected Metropolitan of the Church of England in Canada.

MEIGHEN, ARTHUR. See article, Vol. V.

MEREDITH, SIR WILLIAM RALPH (1840-1923). Jurist, born in Middlesex County, Ontario. He became Chief Justice of the Common Pleas division of the High Court of Justice in 1894, and Chief Justice of the Supreme Court of Ontario in 1912.

METCALFE, CHARLES THEOPHILUS, BARON. See article, Vol. V.

MINTO, GILBERT J. M. K. ELLIOTT, 4TH EARL OF. See article, Vol. V.

MONCK, CHARLES STANLEY, 4TH VISCOUNT, Vol. VI.

MONCKTON, ROBERT (1726-1782). British soldier, born in England. He served in Flanders in 1742 and was sent to Nova Scotia in 1752. He was Brigadier-General under Wolfe at the siege of Quebec. In 1761 he was made Governor of New York and the following year sailed with Rodney in the expedition to the West Indies. He afterwards sat in Parliament for several years.

MONTCALM, LOUIS JOSEPH, MARQUIS DE See article, Vol. VI.

MONTMAGNY, CHARLES JACQUES HUAULT DE (1584?-1653). Statesman, born in France. He came to Canada as Governor in 1630, and built the fort at the mouth of the Richelieu, where Sorel now stands, 1642. He made a treaty of peace with the Iroquois, 1645. He returned to France in 1648, was appointed Governor of the island of St. Christopher in 1653, and died there.

MONTREAL. See article, Vol. VI.

MOOSE RIVER. A river of Ontario whose many tributaries cover a large area in the country north-east of Lake Superior. From the head of the Mattagami River to James Bay, its length is 340 miles. Moose Factory, of the Hudson's Bay Company, stands near its mouth.

MORAVIANTOWN. A battle in the war of 1812-1814. In September, 1813, after Perry's victory on Lake Erie, the British General, Proctor, with about 800 men, and some Indians under Tecumseh, retreated up the Detroit River and the Thames to Moraviantown, where he was attacked by the American General, Harrison, with about 3500 men. The chivalrous Tecumseh fell in the battle, which was an American victory. Proctor escaped, to be afterwards court-martialled.

MOUNTAIN, JACOB (1749-1825). Church of England bishop, born in Norfolk. In 1793 he was appointed the first Anglican Bishop of Quebec. He built the Cathedral of Quebec and was a man of wide influence both in ecclesiastical matters and public affairs.

MOUNTAIN PASSES. See **PHYSICAL FEATURES**, Vol. IX, page 4803.

MOUNT STEPHEN, GEORGE STEPHEN, FIRST BARON (1829-1921). Financier and railway executive, born in Scotland. He went to Canada in 1850, developed a successful business in Montreal, and became president of the Bank of Montreal in 1876. He was closely associated with Strathcona, Van Horne, and others in building up the Canadian Pacific Railway, of which he became president in 1881. He and Strathcona gave \$1,000,000 between them in 1886 for the erection of the Royal Victoria Hospital in Montreal.

MOWAT, SIR OLIVER (1820-1903). Statesman and jurist, born in Kingston, Ontario. He was a sagacious constitutional lawyer, and for nearly a quarter of a century (1872-1896) Premier of Ontario. He took an active part in the movement for Confederation and was Vice Chancellor of Ontario, 1864-1872. He was a member of the Dominion cabinet and leader of the Senate, 1896. The following year he became Lieutenant-Governor of Ontario.

MULOCK, SIR WILLIAM (born 1844). Statesman and jurist, born in Bond Head, Simcoe County, Ontario. He entered public life in 1852, from 1896 to 1905 was Postmaster-General of Canada. It was largely as a result of his enthusiasm that penny postage was adopted throughout the Empire. He was appointed Chief Justice of Ontario in 1923 and resigned in 1936. He became an Imperial Privy Councillor in 1925.

MURRAY, JAMES. See article, Vol. VI.

MUSIC. Music in Canada may be classified under four heads: (1) Indian music, (2) folk music, (3) music in the cities, and (4) music at competitive festivals.

Indian Music. The Department of Mines has recorded about 3000 Indian tunes. Most of these now exist on gramophone records, but a number are printed in staff notation. Their study suggests many interesting questions. First, there is the hypothesis, based upon the similarity between the music of the North-West Indian and that of the Asiatic races, which postulates the theory that intercourse via Bering Strait (40 miles in length and frozen in winter) must have extended to cultural as well as commercial matters. Second, there is the more technical question of rhythm. Indian songs are often accompanied by drum beats. These, while maintaining a strictness of

tempo and regularity in recurrence, often show a strange independence of the rhythm of the melody. This rhythmic sense is peculiar and distinctive, and one which other and more tutored races find difficult to imitate.

Folk Music. Of the folk music of Canada about 7000 songs, versions of songs, and melodies have been recorded. Most of these come from the province of Quebec, indicating that folk songs were once a feature of the daily life of the French Canadian. Research into their origin indicates that only about 10 per cent have been written in Canada. The rest came with that seventeenth century tide of immigration which brought large



FRENCH CANADIAN SINGERS

The Bytown Troubadours, well-known interpreters of French Canadian folk songs at several festivals throughout Canada.

numbers of French people from Normandy and the Loire to the shores of the St. Lawrence. More and better preserved French folk songs are to be found in Canada than in France itself.

In the main French Canadian folk music can trace its antecedents to the art of the jongleur. Flourishing in France until the appearance of printing, his art is distinguished from that of the troubadour by its lineage, its avoidance of script and writing, and its desire to appeal to popular rather than aristocratic favour. It is interesting to know that while the troubadours died out in the fourteenth century, the jongleurs survived until the sixteenth. See **JONGLEURS; TROUBADOURS**.

The appearance of Indian and French Canadian melodies in staff notation has already shown signs of affecting the Canadian musician. It is significant that in recent years a number of these melodies have appeared in modern settings, while a few have already flowered in Canadian compositions.

Music in the Cities. As in most countries, this constitutes by far the major part of the country's music. It may be tabulated as follows: (1) Organized or community effort, including musical clubs, choral societies, orchestras, church music, and educational work; and (2) the more individualistic efforts of musicians. Canada usually follows British precedent in that musical enterprise is mostly under private management. Two exceptions are: (1) In educational work the province of Quebec gives one notable scholarship; and (2) for similar educational purposes much assistance has been received from the Carnegie Trust. Of concert halls which have materially assisted in musical growth, the following are important: Massey Hall, built and given in 1892 to the city of Toronto by Hart Massey as a memorial to his son; Darke Hall, built in Regina in 1929 by F. N. Darke; the Civic Auditorium, built in Winnipeg in 1932 as a relief measure by the Dominion, provincial, and city governments.

Musical Clubs. Musical clubs have been particularly associated with the women of the Dominion. They trace their origin to the United States. Combining musical programmes with certain social allurements, they have succeeded (1) in creating a music mindedness in places where little music had been heard before; (2) in bringing artists to towns where they were unknown; and (3) in presenting music of a nature not calculated to win easy approval. Many such clubs have shown a generous desire to encourage student and local effort. The women's clubs of Vancouver, Calgary, and Winnipeg have given valuable scholarships. The Men's Musical Club of Winnipeg, founded in 1915, has been successful in furthering the musical interests of that city.

Choral Singing. In choral singing Canada has achieved perhaps its greatest distinction. The British temperament, which impels a body of amateur singers to submit to months of severe drilling for the sake of a comparatively short hour of triumph, has been as noticeable in parts of Canada as in parts of England. Choral societies exist in most Canadian cities.

Foremost is the Mendelssohn Choir of Toronto, founded in 1894. This organization was the first to show that Canada, musically speaking, could export as well as import. It was organized by the late Augustus Vogt, and conducted by him from 1894 to 1897, and from 1900 to 1917. H. A. Fricker has directed its fortunes ever since. In matters of policy the choir has been catholic. Its programmes have included ambitious works for chorus with orchestra and unaccompanied choral work of many schools. In the former they have been associated with the

Chicago, Philadelphia, and Cincinnati symphony orchestras. This choir has given a number of concerts in the United States.

Another distinguished Ontario group is the Schubert Choir of Brantford, founded and conducted by Henri Jordan. This choir won first place in the American National Eisteddfod at Scranton, Pennsylvania, and its appearances in Toronto and elsewhere have gained for it a reputation of the first rank. The Canadian choir of Brantford, founded in 1929, conducted by Frederic Lord, has toured England.

Farther west is the Winnipeg Male Choir, founded in 1916. It has toured in the United States and Eastern Canada. Winnipeg possesses two other choral organizations, the Philharmonic Choir of mixed voices, and the Winnipeg Boy's Choir. The latter began in 1925 and has become widely known for its concert and radio work.

As a coda to Canada's achievements in choral work mention should be made of the Elgar Choir in Hamilton, formerly conducted by Bruce Carey and by W. H. Hewlett—an organization which has done much to create a musical taste in that city. The Bach Choir of Vancouver has a reputation which is steadily growing.

Orchestras. In orchestral affairs Canada has felt the influence of the United States. During recent years a determined effort has been made to emulate the American example of making the orchestra the magnetic centre of the city's musical life.

In this Toronto has taken the lead. Its orchestral history is a record of the following: from 1908 to 1914 the first Toronto Symphony Orchestra, with F. S. Welsman as conductor, and with a membership of between seventy and eighty professional players—gave regular concerts at Massey Hall. From 1924 to 1932 another organization, subsequently also taking the name of Toronto Symphony Orchestra, gave twilight concerts under the baton of Luigi von Kunitz. To enable the promoters to carry on during these difficult years the musicians worked on a co-operative basis. Since 1931 the orchestra has been conducted by Sir Ernest MacMillan. The Summer Symphony Orchestra of Toronto, after some tentative and not very successful efforts, came prominently into public notice in 1934. Then Reginald Stewart was appointed its conductor and the Varsity Arena was engaged for a series of weekly concerts. The first programme had an unusual interest. A symphony by Percival Price, which had brought to its author the coveted Pulitzer Prize scholarship after its rejection by the University of Toronto, was performed for the first time. The general public, aroused



INDIAN MUSIC

Left: Kwaraki, a Skeena River Indian, singing a medicine-man's song to the accompaniment of his skin drum. Right: Medicine songs by Indian singers on the Nass River, British Columbia.

Photos: Canadian Government

by the controversy which had ensued, became orchestrally minded for the first time and symphony concerts began to attract audiences numbered in thousands.

In other cities orchestral work likewise has taken a firm hold in public regard. The Montreal Symphony Orchestra, under Douglas Clark, finished its fifth season of weekly concerts in 1936. A second symphony orchestra society, known as *Les Concerts Symphoniques de Montreal*, conducted by Wilfred Pelletier, was organized in 1935. It has the support of the French-speaking population and is the recipient of a grant from the provincial government of Quebec.

The Calgary Symphony Orchestra gave its first concert on 30th April, 1930, with a membership of thirty-six professional and thirty-nine amateur players. It has given about four concerts each season since then, with Grigori Garbovitsky conducting.

The Vancouver Symphony Society, organized in 1919, suspended its activities in 1922, but was reorganized in 1930. Under the baton of Allard de Ridder, it gives six Sunday afternoon concerts between October and March besides occasional outdoor performances in Stanley Park. These programmes have attracted large audiences and seem to be firmly established.

Church Music. Church music in Canada is of a high standard. Most of the mixed choirs are trained in a *cappella* work. Many take part in the competitive festivals and many of the best choral societies can trace their inception to successful church beginnings.

The influence of the church is also seen

in the industry of organ-building, many Canadian makers having achieved a high standard of excellence. To another influence of the church may be traced the College of Canadian Organists, similar in its purpose to that of the Royal College of Organists of England.

Chamber Music. Chamber music in Canada has become a more important factor in recent years. There are many string quartets and other ensemble organizations. The Hart House Quartet, founded by Vincent Massey and named after Hart House of Toronto, has toured Canada, the United States, and Europe. The Quartet is subsidized, and thus is able to devote ample time to rehearsals and performances.

Educational Work. Educational work includes that done by the universities, the musical colleges, the schools, and private teachers. The Universities of Toronto, McGill, Dalhousie, Bishop's (Lennoxville), Mount Allison, Acadia, and Saskatchewan give degrees in music. University trends are toward admitting music studies as optional subjects in matriculation. Of the colleges, the McGill Conservatorium (of McGill University) and the Toronto Conservatory of Music (of the University of Toronto) are the oldest. In public schools, the teaching of music is increasing. In this connection the work of the Canadian Bureau for the Advancement of Music has been important.

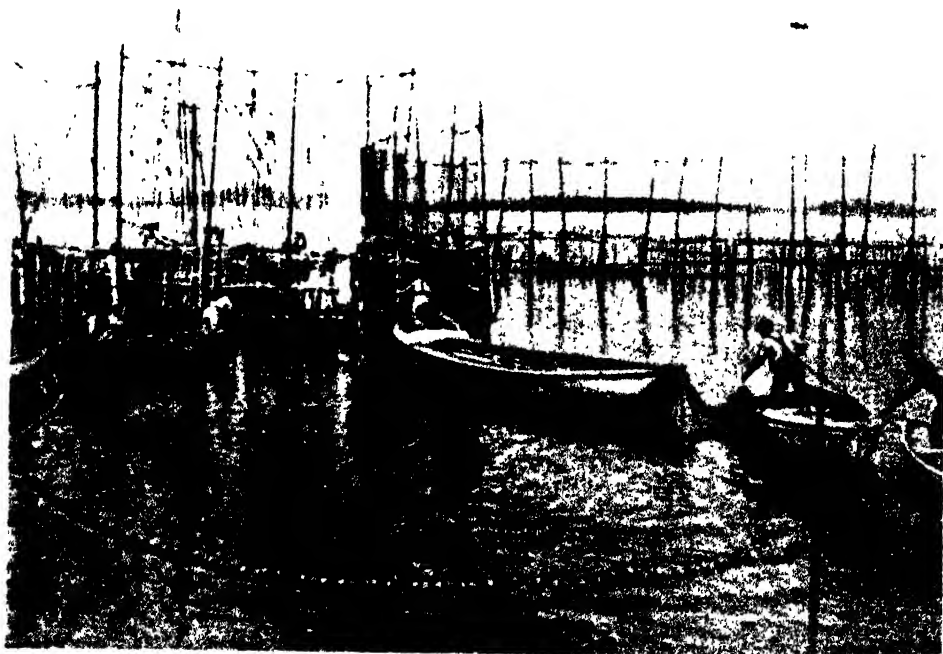
Composition. In composition, the most significant evidence of a nation's musical prowess, there is little to record. In church and organ music, the name of Healey Willan is known in all parts of the Dominion, in the

United States, and to some extent in England. Others known outside their own cities include Achille Fortier, Claude Champagne, Alfred Laliberté, Ernest MacMillan, and Alfred Whitehead.

Competitive Festivals. The competitive festival movement, like other factors in Canadian musical life, shows the influence of British heredity. As in England, its growth has been rapid and its influence far-reaching. The three Prairie Provinces were first in the field. Alberta held its first festival in Edmonton in 1907. Saskatchewan followed in 1909, and Manitoba in 1919. Ontario and British Columbia began in 1923, while Nova Scotia held its first festival in the spring of 1935. In 1926 the necessity for co-operation in the matter of adjudicators led to an amalgamation of the four western provinces into an inter-provincial association. This has become affiliated with the British Federation of Musical Competition Festivals, an organization incorporated by Act of Parliament in 1921, and now claiming an interest in over 200 major festivals during the year, in all parts of the Empire. Manitoba has a provincial festival at Winnipeg—and local festivals at Selkirk,

Brandon, Dauphin, Killarney, Minnedosa, and Boissevain. Saskatchewan divides its provincial festivals between Saskatoon, Moose Jaw, and Regina, and has local groups at Carlyle, Weyburn, Nokomis, Qu'Appelle, Assiniboia, Shaunavon, Rosetown, Star City, Lloydminster, Prince Albert, North Battleford, and Swift Current. Alberta holds its three major festivals at Calgary, Edmonton, and Lethbridge, and its local gatherings at Drumheller, Blairmore, Stettler, Camrose, Red Deer, Ponoka, the Peace River, Lacombe, Westlock, and other towns. British Columbia has its provincial festival at Vancouver, and its smaller affairs at Victoria, Nanaimo, Kamloops, Kelowna and Penticton, Nelson and Trail, and Cranbrook.

The initial festival of Ontario, held in Toronto in 1923, failed to attract the interest which its promoters had anticipated. Consequently Toronto has not figured in the movement since then. The Canadian Bureau for the Advancement of Music, however, has carried on the competitive festival movement on a smaller scale in conjunction with the Canadian National Exhibition. In the smaller towns of Ontario, the movement shows much progress. Stratford, Brampton,



A SARDINE INDUSTRY FISHING WEIR AT ST. ANDREWS, NEW BRUNSWICK

Fishing first drew Europeans to the shores of Canada.

Photo: Canadian Official News Bureau

Kitchener, Sarnia, Woodstock, St. Catharines, and Aurora are only a few of the places where success has been attained.

NATURAL RESOURCES OF CANADA.

Canada, bordered by three oceans, has an enormous area of rocky shield and fertile plain and a great lake and river system, providing natural resources in rich variety. From the beginning the people of Canada have made their living by exploiting these resources, first those most easily reached—fish, fur, and lumber—and later those requiring greater technical skill and larger capital investment to employ, such as minerals and water power.

Fisheries.

Fishing first drew Europeans to the shores of Canada. This industry has produced ever since an abundant and inexhaustible harvest. The North Atlantic deep-sea fishery area, including the famous Banks, contains 200,000 square miles, and Canada has entire control of 15,000 miles of inshore fishing grounds. In the North

Atlantic, cod, haddock, and halibut are the chief catch. The inshore waters yield fish in great variety—smelts along the gulf shore of New Brunswick, swordfish off Cape Breton, alewives in the rivers of Nova Scotia, and salmon in the rivers of Nova Scotia, Labrador and New Brunswick. Lobsters, herring, and mackerel are taken along the entire coast. Lobsters are abundant from Liverpool to Yarmouth, herring off Charlotte County, and clams and scallops in the Bay of Fundy.

Salmon are the most important catch of the rivers of the Pacific coast. Halibut are caught along the Pacific coast and pilchards off the west coast of Vancouver Island. The salmon catch of the Dominion in 1930 was valued at \$17,731,891; lobsters, \$5,214,643; cod, \$4,288,813; herring, \$2,623,174; and halibut, \$2,871,455. Figures for 1930 are given as those of the last normal year before the effects of the depression were apparent.

Beside the ocean fisheries, Canada has a great area of lakes and rivers, the Dominion's share of the Great Lakes alone being 34,000 square miles in extent. Salmon are taken along the coasts of the Arctic Ocean and Hudson Bay. In 1930 the value of white-fish was \$1,818,941, and of trout, \$1,031,979. The entire value of the products of the fisheries in 1930 was \$47,804,216.

To conserve the fisheries, Government hatcheries distribute young fish, principally

salmon and trout. The so-called Halibut Treaty with the United States provides for the protection of halibut in the Pacific. Restrictions are laid on certain rivers to conserve the supply of salmon. Sea fisheries are controlled by the Dominion; inland fisheries, by the provinces.

Furs. After the fishermen there came to Canada the fur traders, who traded with the Indians for furs from the great forest which then extended to the borders of the St. Lawrence and the Great Lakes. As settlers



SALMON FISHING IN BRITISH COLUMBIA
The net has been hauled in ready for the removal of the catch.

Photo: Canadian Official News Bureau

cut down the trees and turned the soil to agriculture, fur trading was pushed farther west and north and diminished in importance. Furs, including fox, musk-rat, mink, and beaver were taken to the value of \$12,349,328 (1934). Fur farming has developed rapidly in recent years and is an important source of furs.

Timber. One-third of the land area of Canada is covered with forest, the total stand of timber being estimated at 266,844,000,000 cubic feet. Of this amount, 216,236,000,000 cubic feet is coniferous and 50,608,000,000 cubic feet broad-leaved. About two-thirds of this quantity is at present accessible. The forest area of Canada falls into three divisions, (1) the great coniferous forests of the Pacific slope; (2) the northern, largely coniferous forest, stretching from the Rocky Mountains to Labrador; and (3) the mixed hard and

soft wood forest of southern Ontario, Quebec, and the Maritimes, which has been largely cut down to make farming land or preserved in farmers' wood-lots. It is estimated that of the original forest, 60 per cent has been cleared away or burned, 13 per cent cut for use, and only 27 per cent remains.

The forests of eastern Canada have an estimated total of 91,473,000,000 cubic feet of standing timber, composed for the most part of black and white spruce, balsam fir, tamarack, and jack pine. The abundant rivers and lakes and heavy snowfall of the region provide means of transport and water power. The frozen water surfaces furnish means of winter travel. White pine has been rapidly exhausted and spruce has become more important to the pulp and paper industry. Over half the timber cut in Ontario is white pine. Spruce dominates in Quebec and New Brunswick. The Prairie Provinces also produce a little spruce.

Douglas fir is the most important timber in British Columbia. About half the saw timber produced in Canada comes from that province, which contains three-quarters of the saw-material in the Dominion.

The total amount of wood cut in Canada in 1933 was equal to 2,027,713,767 cubic feet of standing timber. A large proportion of timber was cut for firewood, chiefly from farmers' wood-lots. Next in importance came pulp-wood, which is the most important commercial wood product; then logs and bolts; railway ties; posts; fence rails; and mining timbers. The greatest recent development has been in British Columbia saw-timber and in pulp-wood cut in Quebec, Ontario, and New Brunswick.

Nova Scotia's forest land is nearly all privately owned; but 90 per cent of all Canadian forest lands are owned by the governments, and cutting rights are granted under a variety of terms. The rate and manner of cutting can therefore be controlled and conservation measures can be applied. Scientific forestry is necessary to ensure a perpetual timber supply. The Government and certain lumbering and pulp and paper companies carry on reforestation and protection projects and a fire protection service, using lookout towers, telephones, aeroplanes, and radio to prevent or limit forest fires.

The woods and streams of Canada attract hunters and fishermen while forest reserves, National Parks, and the beauty and variety of the scenery from the valleys of Nova Scotia to the mountains of British Columbia draw great numbers of campers and tourists. See **FORESTS and FORESTRY**, and separate articles on the trees mentioned.

Farm Land. Timber cutting in the south-

ern parts of Ontario and Quebec left rich farming lands which filled rapidly with settlers. Of the total area of Canada, about 352,000,000 acres are potential agricultural or grazing land, although less than half has yet been occupied. About 198,000,000 acres of agricultural land are still available, part of which lies in small areas in various sections. Another part is in two large areas—the clay belt of northern sections of Ontario and Quebec, and the northern parts of Saskatchewan and Alberta. The clay belt lies from 100 to 200 miles south of James Bay. It extends east and west of Cochrane and has an area of about 16,000,000 acres in Ontario and 13,000,000 acres in Quebec.

The settlement of the northern parts of Saskatchewan and Alberta depends on the quality of the soil, the length of the frost-free growing period, and the development of new varieties of cereals. It is estimated that 20,000,000 acres are suitable for settlement in the northern portion of the Prairie Provinces. See also **AGRICULTURE AND FARMING**, Vol. IX, page 4702.

Minerals. Railway building across the hitherto unexplored rocky shield of northern and western Ontario exposed the existence of valuable minerals. Within a little over a generation vast mineral resources have been discovered and developed. The value of mineral production in Canada was \$64,000,000 in 1900; it was over \$308,000,000 in 1935.

The Dominion stands first in world production of nickel and asbestos, third in gold, third in copper and silver, and fourth in lead. Ontario is by far the most important province as a metal producer. British Columbia comes second, and Quebec is third.

Coal. Coal was found at an early date on Vancouver Island, Cape Breton Island, and at Pictou, Nova Scotia. The railways later made available large quantities of coal in Alberta and interior British Columbia.

Canada owns one-sixth of the coal reserves of the world—about 1,234,269,000,000 metric tons—yet the eastern industrial provinces are obliged to import coal from the United States and Great Britain. The large coal fields lie far from the centres of industry and population, and they consist of bituminous coal and lignite with only a small amount of anthracite.

Nova Scotia has small coal reserves, but of great commercial importance because they lie near the seaboard and close to the great supplies of iron ore at Wabana, Newfoundland. Known reserves are estimated at 2,188,151,000 metric tons and probable reserves at 4,891,817,000, neglecting submarine deposits more than three miles from land. The Cumberland and Pictou are land coal fields. The Cape Breton, or Sydney



NATURAL RESOURCES

1. Collecting maple syrup for making maple sugar. 2. Diversion and main storage dam in the Jordan River hydro-electric plant, British Columbia. 3. Screening coal, of which Canada has one-sixth of the world's reserves. 4. Logging in New Brunswick. 5. Coniager Cobalt Mine, Ontario. Canada produces most of the world's supply of cobalt.

Photos: Canadian Official News Bureau, Canadian Pacific Railway

field, much of which is submarine, furnishes over three-fourths of the coal output of the province. Nova Scotia is the leading coal producer of the Dominion.

British Columbia has about 76,000,000,000 metric tons, chiefly bituminous. Vancouver

Island is an old coal region producing coke and fuel for the Pacific coast. The Crowsnest field is the largest on the entire Pacific coast and lies in an important area. There are also important coal fields in the Liard and Peace River districts, at Groundhog Mountain,

in Skeena and Morice River districts, and in other areas which have been little explored. There is coal also in the Yukon and the Arctic Archipelago.

Alberta has 87 per cent of the Dominion's coal reserves, the quality ranging from semi-anthracite to lignite, in the Crowsnest field on the eastern slope of the Rockies, the Belly River field which centres at Lethbridge, and the Edmonton field. The latter produces lignite and at Drumheller a high-grade bituminous coal which is mined in open pits. Alberta coal is employed for domestic and industrial uses on the prairies and by the railways. Saskatchewan and Manitoba have some lignite which is used locally but will not bear transportation.

Ontario and Quebec, rich in other minerals, have no coal, except some lignite in the James Bay area. New Brunswick has shallow deposits of bituminous coal estimated at 151,000,000 metric tons.

Canada's vast reserves of coal can be made useful if there are cheaper transport rates and perhaps by new industrial processes which may make bituminous coal or even lignite available for purposes for which anthracite is now imported. See COAL, Vol. II.

Other Non-metallic Minerals. Gypsum, one of the earliest minerals produced in Canada, occurs chiefly in Nova Scotia; New Brunswick; at Paris, Ontario; Gypsumville, Manitoba; and Falkland and Mayook, British Columbia. Production was valued at \$920,000 in 1935.

Salt comes from wells in south-western Ontario; Malagash, Nova Scotia; and McMurray, Alberta. Production in 1935 was valued at \$1,723,000.

Natural gas is produced in the Turner valley and other places in Alberta, in south-western Ontario, and near Moncton, New Brunswick. The total production was valued at \$8,367,000 in 1935.

Petroleum is produced principally in the Turner valley, Alberta, although there are oil fields in south-western Ontario and near

Fort Norman on the lower Mackenzie River. The output for 1935 was valued at \$3,406,000.

Canada produces most of the asbestos in the world at mines in eastern Quebec—in Coleraine, Thetford, Broughton, and Shipton townships. The production of 1935 was valued at \$6,972,000.

Canada also produces commercial quantities of diatomite, feldspar, magnesite, mica, sodium carbonate, sodium sulphate, sulphur, and talc. Building stone is produced and the

glacial clays of the St. Lawrence valley furnish materials for many brick and tile factories.

Gold. Placer gold, discovered in British Columbia and the Yukon before the building of the railways, gradually declined until now it is relatively unimportant. Placer mining has recently been revived in the Stikine, Liard, Cariboo, and Atlin districts. Almost all of Canada's



ASBESTOS MINE AT THETFORD, QUEBEC

Quebec province is the chief source of chrysotile, the best form of asbestos.

Photo Canadian Official News Bureau

production consists either of lode gold as found in Ontario, British Columbia, and Nova Scotia, or gold occurring in combination with copper, silver, lead, and zinc, as in Quebec and Manitoba. Quartz gold is produced in British Columbia at the Premier mine on the Portland Canal and at the Pioneer, Bralorne, and other mines in the Bridge River district.

Ontario leads in gold, producing 2,218,060 fine ounces of the Canadian total of 3,290,664 in 1935. Most of this came from the Porcupine and Kirkland Lake areas. Lode gold is also produced at the Howey and Moss mines in north-western Ontario, in the Matachewan district, and at Little Long Lake, Summit, Pickle Crow, Central Patricia, and other mines. New discoveries have been made near the Sturgeon River.

In Manitoba gold is found in the low-grade ores at Flin Flon and quartz gold has lately been found in the Rice Lake area and in other places. Quebec produces gold from the copper-gold deposits at Rouyn. Production in Nova Scotia is small but has recently increased. In 1935 Canada produced gold



TURNER VALLEY OILFIELD, ALBERTA

The largest oilfield in Canada.

Photo: Canadian Official News Bureau

to the value of \$115,798,000. See **GOLD AND GOLD-MINING**, Vol. IV.

Nickel. Railway building revealed the great nickel-copper deposits of the Sudbury district in northern Ontario, the largest in the world. In 1935 the value of nickel produced in Canada was \$35,450,000. See **NICKEL**, Vol. VI.

Copper. Copper, in connection with nickel, occurs in Ontario in the Sudbury area. Large bodies of copper and zinc with gold are found at Rouyn, in Quebec. Copper is found also in the Flin Flon district of Manitoba, in British Columbia at Britannia mine on Howe Sound, and at Hidden Creek and Bonanza Mines on Portland Canal. The value of production in 1935 was \$32,322,000, about half coming from Ontario. See **COPPER**, Vol. II.

Silver. Most of the silver in Canada occurs in combination with other metals. Silver was discovered at Cobalt during the construction of the Temiskaming and Northern Ontario Railway in 1903, and deposits were later found at Gowganda and South Lorrain. The supply of silver from these mines has been exceeded by the output of mines in British Columbia, principally the Sullivan lead-zinc mine, which is the largest silver producer in Canada and the Premier mine. Silver-lead ores are mined in the Yukon. In 1935, \$10,346,000 worth of silver was produced in Canada. See **SILVER**, Vol. VII.

Platinum Metals are recovered in refining the nickel-copper ores of the Sudbury district, also in British Columbia placer ores. Their value in 1935 was \$5,326,000. See **PLATINUM**, Vol. VI.

Cobalt. Most of the cobalt produced in the world came from the Cobalt district of Ontario until supplies were found in central Africa. The Canadian output in 1935 was valued at \$514,000. See **COBALT**, Vol. II.

Lead and Zinc. Lead and zinc come from the Kootenay district of British Columbia, principally from the Sullivan silver-lead-zinc mine near Kimberley and from the Slocan mines. Lead and zinc are found in the Rouyn

and Notre-Dame-des-Anges districts of Quebec. Lead-zinc ores have recently been discovered in the Sudbury area. Lead occurs with zinc at Galetta, Ontario, and in connection with silver in the Mayo district of Yukon. Lead production in 1935 was valued at \$10,620,000. Zinc-bearing deposits occur in Manitoba at the Flin Flon and Sherritt-Gordon mines and in Nova Scotia at the Sterling mine. Zinc produced in 1935 was valued at \$9,825,000. See **LEAD**, Vol. V; **ZINC**, Vol. VIII.

Iron. Iron ore of low quality occurs in Quebec and at Michipicoten in Ontario, but it is not at present commercially valuable.

Radium. The aeroplane as a prospecting instrument is giving access to more remote areas and making possible new discoveries. In 1930 a high grade of pitchblende was discovered at Great Bear Lake, which has been tested and found to yield radium at the rate of one gramme to ten tons of ore. Production is still in the experimental stage. See **RADIUM**, Vol. VII.

Water Power. Eastern Canada, with the densest population, the largest industrial development, and the easiest access to foreign markets, has little coal, but abundant supplies of water power. Canada has a freshwater area of 228,000 square miles, abundant rainfall, and drainage slopes which provide maximum opportunities for the development of hydro-electric power. It is estimated that 20,347,400 horse-power are available at minimum yearly flow and 33,617,200 at six months flow. The possible turbine installation is 43,700,000 horse power; so far, installation is 7,909,115 horse power or about 18 per cent of that available. More than 95 per cent of this power installation is in Quebec, Ontario, Manitoba, and British Columbia, where forests of spruce and deposits of minerals are also found, so that not only has water power helped to develop these industries but the industries have hastened the development of water power.

British Columbia has over 6,000,000 commercial horse-power available, of which over

700,000 is in use. There are large power developments near Vancouver and Victoria for municipal and industrial purposes; near Nelson, Britannia, Anyox, and other places for mining and smelter operation; and at Ocean Falls and Powell River for pulp and paper mills.

The three Prairie Provinces have more than 9,500,000 commercial horse-power available, three-fourths of which is in Manitoba and the rest divided about equally between Saskatchewan and Alberta. Alberta has developments on the Bow River which supply Calgary and other cities and towns of the Province with light and power. Manitoba has developments on the Winnipeg River to supply the city of Winnipeg and the southern part of the Province. There is abundant undeveloped power on the Bow, Slave, Peace, and Athabasca Rivers in Alberta and in Manitoba on the Churchill and Saskatchewan. The Nelson River has power potentialities comparable to those of Niagara Falls. Power is developed on the Churchill River in Saskatchewan for mining purposes in the Flin Flon district.

Ontario has 9,000,000 horse-power of possible commercial water power, with about 2,560,000 horse-power installed. The largest development is of course on the Niagara River, where Canada has treaty rights to about 1,000,000 horse-power, all of which is developed. The Ontario Hydro-Electric Commission has there the largest single-power plant in Canada, with a capacity of 560,000 horse-power. In 1934 the Commission served 740 municipalities. There are important power sites on the Ontario portion of the St. Lawrence River, on the St. Mary River between Lake Superior and Lake Huron, and on the rivers running into Lake Huron.

Some tributaries to Lake Superior—the Nipigon, the Kaministiquia, the White, Magpie, Michipicoten and Montreal Rivers have power potentialities and power is developed at Cameron Falls and at Alexander on the Nipigon River and at Kakabeka Falls on the Kaministiquia to supply Port Arthur and Fort William, and grain elevators, pulp and paper, and mining industries. In northern Ontario water power is being increasingly employed for mining and smelting purposes.

Quebec, with about 17,000,000 commercial horse-power possible, has more than any other province, and with an installation of 3,853,000 horse-power uses more. Beside the great power reserves of the St. Lawrence itself, its tributaries the Saguenay, the St. Maurice, and Ottawa offer enormous power possibilities. Manufacturing centres such as Chicoutimi, Grand Mère, Shawinigan Falls, Sherbrooke, Three Rivers, and others have

developed around great pulp and paper, textile, electro-chemical, and electro-metallurgical projects brought into being by the existence of cheap hydro-electric power.

Of the Maritime Provinces, Prince Edward Island has little water power. It is estimated that an installation of 300,000 commercial horse-power would be possible in Nova Scotia, of which 116,000 is in use. New Brunswick has available about 450,000 commercial horse-power. Of this 133,681 is installed. The largest development in the Maritimes is at Grand Falls on the St. John River, with an installed capacity of 80,000 horse-power.

Many rivers, such as those of the Hudson Bay drainage slope, have not been thoroughly examined and it is probable that the water power resources of Canada will be found to be larger than present estimates show.

NELSON RIVER. See MANITOBA, Vol. V.

NEW BRUNSWICK. See article, Vol. VI.

NEW WESTMINSTER. A city of British Columbia, founded by Colonel R. C. Moody, in 1859. It was first known as Queensborough, but the place was given its present name by Queen Victoria, the same year when it was selected as the capital of the province. It was incorporated as a town in 1860, but, eight years later, the seat of Government was removed to Victoria. Salmon tinning is the principal industry. Population, 17,524 (1931).

NIAGARA FALLS. A city once known as Suspension Bridge, or Clifton, situated in Welland County, Ontario, on the west bank of the Niagara River. It is connected by bridges with the American city of Niagara Falls, N. Y. Queen Victoria Park covers an area of 154 acres. The principal industrial products include cereal foods, graphite, silverware, hosiery, hats, iron and steel goods, leather goods, and paper boxes. Population, 19,046 (1931).

NICOLET, JEAN (1598-1642). French explorer, born in Normandy. In 1618 he accompanied Champlain to Canada, and spent a number of years among the tribes along the Ottawa River and Lake Nipissing. In 1634 he made an expedition westward. He explored Green Bay, and ascended the Fox River to the Wisconsin River.

NIPIGON, LAKE. A lake north of Lake Superior, into which it is discharged by the Nipigon River. Its area is 1950 sq. miles. The first definite record of its discovery is that of LaTourette, a brother of DuLhut, about 1678, though it may have been first seen by Radisson, in 1662. There have been a series of fur-trading posts on its shores since the early days of the French period.

NIPISSING, LAKE. A lake in northern Ontario, between Georgian Bay and the

Ottawa River. Its area is 330 square miles. It is named after the Algonquin tribe of the same name, and was discovered by the missionary priest, LeCaron, in 1615, on his way to the country of the Huron Indians.

NORTH WEST COMPANY. See HUDSON'S BAY COMPANY, Vol. IV.

NORTH-WEST TERRITORIES. See article, Vol. VI.

NOVA SCOTIA. See article, Vol. VI.

O'BRIEN, LUCIUS RICHARD (1832-1899). Landscape painter, born in Upper Canada. He won fame as a painter in water colours. From 1880 to 1890 he was president of the Royal Canadian Academy of Arts. His pictures of scenery in the Rocky Mountains are highly prized.

ONTARIO, LAKE. See article, Vol. VI.

OREGON TREATY. Between Great Britain and the United States in 1846. It finally settled the question of the International Boundary between Canada and the United States in the far west, which had been a matter of controversy for many years. The forty-ninth parallel was extended to the Pacific.

ORLEANS ISLAND. An island twenty one miles long in the St. Lawrence River, immediately below the city of Quebec. It was discovered by Jacques Cartier in 1535, and named by him the Island of Bacchus, because of the grape-vines he saw growing there. It contains a number of interesting churches and other buildings dating back to the French period.

OSGOODE, WILLIAM (1754-1824). Jurist, born in England. He was appointed Chief Justice of Upper Canada in 1791 and became Chief Justice of Lower Canada in 1794. In Toronto, Osgoode Hall, seat of the Provincial law courts, is named after him.

OTTAWA. See article, Vol. VI.

OTTAWA, RIVER. The principal tributary of the St. Lawrence. It rises in the province of Quebec, almost due north of Ottawa, and after a very roundabout course of 685 miles empties into the St. Lawrence near Montreal. It was explored by Champlain in 1613 and 1615, and was for many generations the recognized route from Montreal to the west for explorers, missionaries, and fur-traders. In the latter half of the last century it was widely used for the rafting of square timber from the north country down to the St. Lawrence. To day it is being rapidly harnessed for the development of water power.

PAPINEAU, LOUIS JOSEPH (1786-1871). French Canadian political leader, born in Quebec. He entered public life in 1812 as a member of the provincial Assembly, and rapidly became a leader of the French Canadians in their fight for responsible

government. Starting as a moderate, he finally became leader of the rebellion of 1837, escaped to the United States, and later went to France. He was afterwards pardoned and returned to Canada in 1845, and again sat in the legislature from 1847 to 1854. His old home on the banks of the Ottawa is now the Seignior Club.

PARKER, SIR GILBERT. See article, Vol. VI.

PARKS, CANADIAN NATIONAL. The most important of the Canadian National Parks are in the Rocky Mountains, and the largest of these are Banff, set apart in 1885, and Jasper, in 1907. Other Rocky Mountain parks are Waterton, Yoho, Kootenay, Mt. Revelstoke, and Glacier, the four latter being in British Columbia. By concurrent legislation in the United States Congress and the Canadian Parliament, Glacier Park in Montana and Waterton in Alberta have been named the Glacier-Waterton International Park.

At Wainwright, in northern Alberta, is a large buffalo reserve (Buffalo Park), another for elk (Elk Island Park), in the same province, and at Nemiskam, one for antelope.

Wawaskey is also in Alberta, Prince Albert in Saskatchewan, and Riding Mountain in Manitoba. In the North are sanctuaries for the wood buffalo and the musk ox, and on the east side of the delta of the Mackenzie River a reserve for reindeer.

In eastern Canada are a number of smaller parks and sanctuaries. The national parks there include Georgian Bay Islands, Point Pelee, St. Lawrence Islands, Fort Beauséjour, and Fort Anne.

PARKS, PROVINCIAL. Among many provincial parks, the more important are Algonquin in Ontario, Laurentides in Quebec, and Strathcona and Garibaldi in British Columbia.

PEACE RIVER. A tributary of the Mackenzie River that rises in Thutage Lake, in northern British Columbia, and empties into Slave River, near the point where it flows out of Lake Athabaska. Its length is 1065 miles. It was explored by Alexander Mackenzie in 1792-1793. Mackenzie followed its southern branch, the Parsnip, to its source, not far from a branch of the Fraser.

PEEL, PAUL (1859-1892). See Art., Vol. IX, page 4725.

PEOPLE AND SOCIAL ORGANIZATION. Canada is still in the process of developing its people and social organizations. It is probably not yet set in its practices and manner of thinking. This is not because it is a new country from the point of view of discovery and exploration, but because its size and other physical features have necessitated different periods of settlement. Many

of its people were born outside Canada and many more were born in a different province from that where they now live. Canadians represent various kinds of civilization instead of one.

Growth of Population since 1608. When Champlain landed in Canada, it probably had a far larger Indian population than it has now. From about 17 persons in 1611, the white population grew to 105,000 in 1771. Prior to 1771 settlements were mainly in Quebec and Nova Scotia and the colonists from France and the British Isles were transitory, leaving the real growth in population to the natural increase of the few French and English who had made permanent

ten years as it had in the previous ten. In 1931 the population of Canada was 10,376,000, almost exactly 5,000,000 increase in thirty years.

Spread of the Population. At first the white population settled in spots—around what is now the city of Quebec, and soon after in the Annapolis Valley of Nova Scotia, spreading gradually over the surrounding territory, especially the portion of Quebec near the St. Lawrence.

After the landing of the Loyalists the people spread over the Niagara Peninsula. The population in these parts grew until some of the rural sections were more densely settled than they are now. Meanwhile small settlements appeared on Vancouver Island and in Manitoba (the Red River Settlement).

During the closing thirty years of the last century and before the North-west was definitely opened up, over 600,000 had gone into areas which were practically unpopulated in 1851. But the real spread of population has taken place in the present century.

Population spread rapidly during the last eighty years. In 1851 the populated area of Canada was 157,000 sq. miles, comparable to Poland, or a little larger than the British Isles. To-day 52 per cent of the population is still confined to this original area. Of the remainder, 4,000,000 have populated 578,000 sq. miles of fresh territory, comparable in extent to the combined areas of Germany, France, and Spain, so that the present total "populated" area of Canada is comparable to Mexico.

The population in this eighty years increased five times, but to do so had to spread over an area almost five times as great as it occupied at the beginning of the period. An interesting feature of the population growth of these newer areas is that it is strongly cyclical in contradiction to the rather steady growth in the older areas. The 1936 census of the Prairie Provinces (forming the greater part of these newer areas) confirmed the view that this cyclical growth synchronizes with prosperity and depression. The Prairie Provinces have increased in quinquennial censuses since 1921 approximately as follows: 1921-1926 (a period mainly of depression, 113,000; 1926-1931 (a period mainly of great business activity), 286,000; 1931-1936 (a period mainly of depression), 60,000. A discharge of population to the older areas takes place during the depression periods and from the old to the new during prosperity. The remaining scattered few (6 per cent of the population) are now spread over a vast area of 2,700,000 sq. miles, which may be regarded as practically unpopulated.

The centre of population which in 1851



RIDEAU HALL, OTTAWA

The residence of the Governor-General.

Photo Canadian National Railways

settlements. During the next forty years the population grew at an increasing rate, a rate unparalleled before or since, reaching 517,000 in 1811. The United Empire Loyalists, and immigrants from the British Isles, who would ordinarily have gone to New England, came to Canada. Then followed a lull for twenty years, after which the population rate speeded up again until the yearly increase was roughly 79,000 from 1851 to 1861. The big increases were more or less coincident with such events as the Irish famine and the building of the Intercolonial Railway. From 1861 to 1901 growth declined, chiefly because of emigration. The Canadian-born population living in the United States grew about a million larger in this interval. Many immigrants came to Canada during this period, but they did not stay.

About the year 1896 attention was definitely turned to the North-West. The North-West and the North had a population of 645,517 by 1901, increasing to 1,735,620 by 1911. The opening of the North-West gave a stimulus to the rest of Canada. Eastern Canada's population registered a growth of over three times as much in these

was to be found in Soulanges, Quebec Province has moved to Algoma, Ontario, a distance of 111 miles north and 451 miles west; but 80 per cent of this movement and almost all the northern movement has occurred during the present century.

Trend to the Cities. It is probable that if Canada had developed large cities like the United States, the standstill in growth toward the close of the last century and the emigration to the United States would not have taken place. With the exception of Montreal there were no cities that could be considered even moderately large. In 1871, when Canadians began to emigrate in large numbers, the populations of the eight largest cities were—

Montreal . . .	130,833	Halifax . . .	29,582
Quebec . . .	59,699	Hamilton . . .	26,880
Toronto . . .	59,000	Ottawa . . .	24,141
St. John . . .	41,325	London . . .	18,000

The next largest city had only 12,000. The eight largest had a combined population of less than 400,000. In 1931 Montreal alone had 818,577; the eight cities combined had over two million, while Winnipeg and Vancouver together had almost half a million.

What urban population Canada had in the early days was situated in small places, a large number of which were tiny unincorporated hamlets. Some of the population manufactured on a small scale for local customers; others who had settled on small or unproductive farms divided their time between farming and fishing, or worked at trades for their neighbours. These workers were probably the first to leave in large numbers for the United States. The sons of farmers who could not expect to inherit their father's land also had to seek employment elsewhere and, lacking cities in Canada, sought this employment in the cities of the United States. Few left the rural regions to farm elsewhere until the opening up of the West. The cities of Canada did not begin to grow rapidly until the present century. The table given opposite reveals the changes between 1901 and 1911.

The combined population of these twelve cities almost doubled in the decade, while the first five more than trebled. In 1931 the urban population of Canada was 53·7 per cent of the total. Of this urban population over five million were in places of a thousand or more and nearly half a million in incorporated places of less than a thousand. There was a rural non-farm population of a million and a half mainly in small unincorporated hamlets. It is difficult to compare the present trend to the cities with that at an earlier date, since the earlier urban popu-

lations were all in comparatively small centres. The size of cities is much more indicative of the degree of urbanization than is the percentage urban.

Progress Toward a Native Population. Prior to 1791, the population was largely French and mainly native-born. In the next sixty years the increase was largely made up of immigrants. By 1851 the native population was nearly two million and the immigrant nearly half a million. At the beginning of the present century the immigrant population was a little less than one-eighth of the total; in 1931 it was over one-fifth, so that the population is much less indigenous now than it was thirty years ago. Besides, a large number of Canadian-born are children of immigrants. At the last census, 46 per cent of the population were themselves born or were children of persons born outside Canada. Only 70 per cent of the total population were born in the province or territory in which they are now living. Summarizing, 2,307,525 were immigrants; 791,504 were Canadian-born transplanted from their provinces of birth to another province, while 2,453,704 Canadian-born had one or both parents immigrant. Of the immigrant population nearly a third had come to Canada since 1921. The present population is largely transplanted, and consequently the country's institutions must be considered as at a formative stage.

Racial Composition. There is another stage through which Canada is only beginning to pass, in the bringing together of the various racial elements who naturally have their own racial traditions. In 1931 Canada had five and a third million people of British races and nearly three million of French; the remaining two million represented most of the races of the globe. More than a million and a half persons were recorded as

	1901	1911
Edmonton . . .	4176	31,064
Regina . . .	2249	30,213
Vancouver . . .	29,432	120,847
Winnipeg . . .	42,340	136,035
Peterborough . . .	12,886	18,360
	<u>91,083</u>	<u>336,519</u>
Hamilton . . .	52,634	81,469
London . . .	37,976	46,300
Ottawa . . .	59,028	87,062
Quebec . . .	68,840	78,710
Victoria . . .	20,919	31,600
	<u>240,297</u>	<u>325,201</u>
Montreal . . .	328,172	490,504
Toronto . . .	209,892	381,833
	<u>538,064</u>	<u>872,337</u>

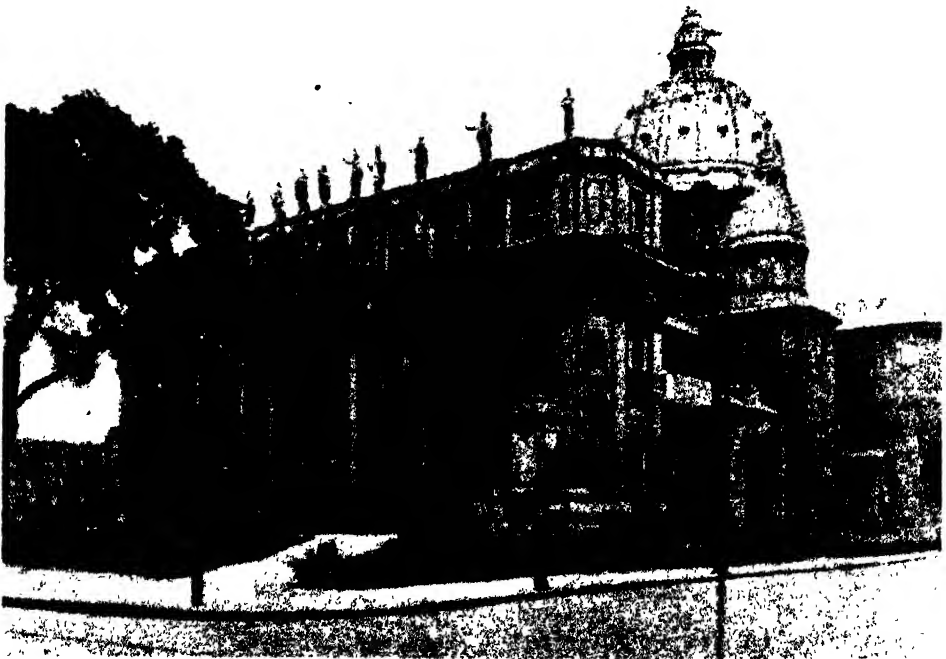
having a mother tongue different from English or French. About six and a half million over five years of age spoke English only; one and a half million spoke French only; one and a third million spoke both English and French; and two hundred thousand spoke neither. See also LANGUAGE, Vol. IX, page 4768.

Distribution of Population by Age and Sex. At the 1931 census half the population was under twenty-five years of age, which indicates a growing population. At the age of sixty-nine there were only about one-fifth as many as the number of babies, which also indicates a new and growing population; but at forty there were 77 per cent of the number of babies, which is very nearly that expected in a stationary population. The population at the middle ages is far larger than one would expect in comparison with the other ages. The reason for this is that the immigrants on their arrival were almost entirely persons between eighteen and thirty-five. Similarly, if the population were indigenous the two sexes would be very nearly equal, but when the immigrants arrived in greatest numbers they were largely males, with the result that now there

are 1074 males to 1000 females, as compared with 1025 in 1881. The ratio is 1246 to 1000 in British Columbia, which is more immigrant than the other provinces.

Canada may be considered, therefore, to have an abnormal age and sex distribution. It will take some time to remedy this. According to the present age distribution the number of older persons will increase very fast until those who are now at the ages of forty to forty-four die off. After that the age distribution may become increasingly normal. This abnormal age distribution has a deep social significance. If there was work for everybody it would probably be a good thing to have as large a number as possible at earning ages, for then there would be more persons to care for those over and under the earning ages. Since there is not work enough for everybody, the largest proportion of the population being at the best earning ages throws the whole system out of gear.

Social Structure. Since certain phases of social structure are described elsewhere, attention here will be confined principally to two features: (1) Families and (2) occupational structure. These, after all, cover the



ST JAMES CATHEDRAL, MONTREAL
Photo Canadian Pacific Railway



CANADIAN NATIVE PEOPLES

1. Chief Duck of the Blackfoots and his wife. 2. Eskimo woman and child. 3. Bella Coola Indian dramatizing the supernatural being "Echo." 4. Chipewyan Indian camp near Churchill, Hudson Bay. 5. Indian Totem poles at Kitwanga, British Columbia.

Photos: Canadian Official News Bureau, Canadian National Railways

main part of the social structure, inasmuch as they include the people at their homes and at their work.

Families. In 1931 the number of families in Canada was nearly two and a half million, consisting of nine and a third million persons, so that over a million persons, or nearly 10 per cent, had no family life. Of the total number of persons in families, about three million were parents; nearly five million were children born in the family and living at home; about eighty thousand were children in the family, adopted or living as wards; and a hundred thousand were dependants other than children. There were over a million persons in families with no dependants. The average size of the family was 3.86, including heads and dependants, but in families with both parents living and with children, the average size of the family was 5.04. Since this was by far the most common family, the typical size of the unbroken family may be regarded as five persons, which coincides with the popular conception. Adding the persons not connected with families to the family heads who

have no dependants, there are 2,121,061 persons with no family responsibilities.

The families with two married heads, containing 90 per cent of the persons in families, deserve more attention than the other families. In 1931 these unbroken families were divided into occupational classes as follows: over a million (consisting of 4,371,293 persons) were in families of wage-earning heads, the remainder being families of employers or independent workers (farmers, shopkeepers, and others) or of persons on income or without occupation. Taking the families with wage-earning heads, the average earnings per person (non-earners as well as earners) were about \$6.30 a week per man, woman, and child.

One more picture of the family refers to what may be called "large families" as compared with small. In rural communities over a third of the children belong to large families consisting of more than six persons; in urban about a fourth. However this is true only of the Canadian families; the immigrant families, especially the British-born, are smaller than this. The million or

more persons not attached to families include domestics, employees and inmates of institutions, half a million lodgers in families, and other persons living where they can.

Housing Conditions. Summarizing: 745,135 households live in homes of four rooms or less; the average number of rooms per house is 5.63. Nearly eight million live in single houses; two million in semi-detached houses, apartments or flats; and three hundred thousand in other types of shelter, including box cars and tents.

Occupational Structure. Of the 10,376,000 persons in Canada at the 1931 census, 3,927,230 were gainfully occupied. This number does not include wives and other homemakers, but it does include the sons of farmers and other sons and daughters working for their parents without money payment. The division of the gainfully occupied persons into different occupational classes and their status within those classes is as follows—

tional group. Commercial and professional workers (other than clerks and labourers) are not overwhelmingly either wage earners or independent workers, while agriculture and fishing are not only mainly independent workers but also comprise 71 per cent of all the independent workers.

This distinction between wage earner and independent worker is perhaps the most important basis on which to describe the social structure of Canada. It is especially interesting historically. For example, the employers and independent workers in manufacturing, building, and construction are the remnants of what in the early days were the main body of those gainfully occupied in the small centres which then constituted urban Canada, and of the workers living upon small or unproductive farms. Canada's actual decline in rural population is largely due to the disappearance of these artisans; not to decrease in agricultural workers. Some of them, no doubt, found similar occupations

Occupational Group	Total Gainfully Occupied	Wage Earners	Employers and Independent Workers	Percentage Wage Earners
All occupations	3,927,230	2,570,097	1,357,133	65.5
Agriculture	1,131,845	202,137	929,708	17.9
Fishing, hunting, and trapping	47,905	10,421	37,484	21.8
Logging	43,995	41,480	2,515	94.3
Mining, milling, and quarrying	58,591	55,326	3,265	94.4
Manufacturing	442,661	384,500	58,161	86.9
Transport and communication	265,833	244,885	20,948	92.1
Electric light and power	32,456	32,413	43	99.6
Warehousing and storage	35,192	35,111	81	99.8
Building and construction	203,066	163,904	39,162	80.7
Trade	313,912	208,017	105,895	66.3
Finance and insurance	36,823	27,457	9,366	74.6
Service—				
Public administration	31,424	31,379	45	99.9
Professional	238,565	166,368	72,197	69.7
Recreational	8078	5865	2213	72.6
Personal	334,394	268,957	65,437	80.4
Laundering, cleaning, and dyeing	22,635	16,455	6,180	72.7
Clerical	241,066	239,882	1,184	99.5
Labourers (not agricultural, mining, or logging)	437,115	433,916	3,199	99.3
Unspecified	1654	1585	69	95.8

The wage earners are those who work for an employer and are paid by him for their services. The others gainfully occupied are the employers themselves, including the independent workers such as farmers, shopkeepers, doctors, and lawyers. It is in connection with the wage earners that we associate unemployment, for the person who owns his own business is supposed to be occupied at it all the time, as long as the business exists.

From the foregoing table it is seen that some occupational classes are practically all in the wage-earning classes, the employers evidently appearing under another occupa-

as wage earners in cities, but not the cities of Canada, because by the time these cities grew these workers were too old. The disappearance from Canada of these workers may have been due to the manufacture on a larger scale in cities of what the workers had been producing, but this manufacture was obviously not in Canada. Their present-day displacers belong to the commercial classes (the buyers and sellers, importers, and exporters), "services" (excluding professional), clerical and labourers. These combined now form nearly half of the wage-earners in Canada. Since 1881 they have multiplied more than six times, while all

other occupations have multiplied less than twice, and the population a little more than twice.

The chief evolution in the social structure may be said to be the gradual change from independent worker to wage earner. How rapid this change has been is indicated by the fact that in 1921 the wage earners were 58.5 per cent of all gainfully occupied; whereas in 1931 they were 65.5 per cent. Something akin to, and partly explaining, what has already been said about the cyclical feature of population growth in newer areas seems to take place in the movement from the class of independent worker to that of wage earner. This was confirmed by the Prairie Province census of 1936. Although its population in the quinquennium 1931-1936 increased by some 60,000, the number of male wage earners decreased by some 25,000. In other words, it would seem that the number of wage earners increases more rapidly than the population in times of prosperity and more slowly (or decreases) in times of depression. Problems of unemployment and class disputes increased correspondingly. On 1st June, 1931, as many as 437,000 of these wage earners were unemployed. Summarizing: of 24,500,000 man-weeks loss of work in the year ending 1st June, 1931, over 4,000,000 were lost by immigrants arriving in the country after 1921; while nearly half were lost by labourers, unskilled workers, and personal service employees. The growth of these as a class clearly was not attended by a corresponding growth in work for them. The commercial class lost only about one-twenty-fourth of the total time lost; they constituted one-twelfth of the number of wage earners. Labourers (including mining and agriculture) and personal service employees constituted considerably over a third of the wage earners. Wholesale trade occupied only about fifty thousand of the wage earners in commercial occupations. All this is significant when considered in juxtaposition with the fact that Canada with its over ten million people ranks about fifth among the countries of the world in foreign trade.

Labour Unions. In connection with this question of the change from the independent worker to the wage-earning class the subject of labour unions is important. *Labour Organization in Canada*, published by the Department of Labour, Ottawa, gives a comprehensive account of these unions. The trade-union membership in 1934 was 281,774, representing 2740 branches. In 1911, the first report on labour organization in Canada showed a membership of 133,132, increasing to 378,047 in 1919, the peak year for membership. The number has been fluctuating

from that date, declining to 260,643 in 1924, increasing to 322,449 in 1929, and declining since.

Trade-unionism in Canada was definitely recognized by the Trade Unions Act, 1872. The Canadian Federation of Labour was formed under the name of National Trades and Labour Congress, in 1902. The unions in affiliation with the Federation as well as other central bodies later organized merged in the All Canadian Congress of Labour, 1927. The Federation of Catholic Workers of Canada was formed in 1921. In the same year Labour definitely entered politics by



FRENCH CANADIAN FAMILY, CHAMBORD
Photo: Canadian National Railways

the formation of the Canadian Labour party. In 1927 the main organization ceased to function, only the Quebec and Alberta branches continuing. Various other independent Labour parties were also functioning after this time, largely disappearing with the establishment in 1932 of the Co-operative Commonwealth Federation. There are also other organizations endorsing Labour candidates for Parliament, municipal councils and other government posts.

PHYSICAL FEATURES. Considerably over three thousand miles divide the point on the eastern coast of Cape Breton Island where John Cabot landed in 1497 and the western shore of Queen Charlotte Islands discovered by James Cook in 1778. The distance is not much less from the southernmost point of Canada, Pelée Island in Lake Erie, to the northern coast of Ellesmere Island, in the Arctic Archipelago. With an area of 3,694,863 sq. miles, the Dominion ranks in size among the first half dozen countries of the world. Canada is a land of immense distances. It occupies the northern half of the continent of North America, with the exception of Alaska and Labrador, and

includes also the Arctic Archipelago between longitudes 60° and 141°.

A map of the country shows not only that it faces three oceans, but that on its eastern side two vast water systems reach into its heart: Hudson Strait and Hudson Bay in the north, the St. Lawrence River and the Great Lakes in the south. These two water routes between the Atlantic and the interior have had a profound influence upon the course of Canadian history. They provided the thoroughfares for explorers and fur traders in the early days. At a later period the tide of settlement flowed along them to the western prairies. To-day they carry many millions of bushels of wheat from these same prairies to the markets of the world.

South-eastern Canada. In considering the physical features of the Dominion we are not particularly concerned with its political divisions. It will be convenient, therefore, to deal with the Maritime Provinces not as Nova Scotia, New Brunswick, and Prince Edward Island, but rather as the south-eastern part of Canada, washed by the Gulf of St. Lawrence, the Atlantic, and the Bay of Fundy. This region consists of (1) the area between the St. Lawrence and the Bay of Fundy, embracing New Brunswick and the Gaspé peninsula of Quebec; (2) the long peninsula of Nova Scotia; and (3) the greater and lesser islands of Prince Edward, Cape Breton, Anticosti, Magdalen, Grand Manan, Campobello, and Sable.

The first-mentioned area arises abruptly

from the St. Lawrence to the Shickshock and Notre Dame mountains of Gaspé, with an elevation of 4200 ft.; drops to from 1000 to 2600 ft. in northern New Brunswick, and an average of less than 500 ft. along the Bay of Fundy. It is drained by a number of rivers, the most important of which is the St. John, which rises partly in Quebec and partly in the state of Maine, forms the international boundary for about a hundred miles, and empties into the Bay of Fundy. Both the capital of New Brunswick and its principal city stand on the banks of this river. Other rivers are the St. Croix, which also forms part of the boundary between New Brunswick and Maine; the Petitcodiac, which flows into Chignecto basin, at the head of the Bay of Fundy; and the Miramichi, Restigouche, and Matapedia, on the Gulf of St. Lawrence side. The interior of the area is largely wooded, cultivation being mainly in the valleys of the St. John and other rivers, and along the Fundy shore.

The peninsula of Nova Scotia is joined to New Brunswick by the Isthmus of Chignecto, across which an attempt was once made to build a ship railway. The project, however, was abandoned. A low mountainous ridge, less than 1500 ft. at the highest point, runs down the middle of the peninsula, with a rocky slope on the Atlantic side, and sweeping down in fertile plains and river valleys to the Bay of Fundy. Between Annapolis basin and the Basin of Minas is the famous apple country of Nova Scotia. The rivers



NEAR THE MOUTH OF THE ST. LAWRENCE

Photo: U. & U.



"THE LIONS" THAT GUARD THE ENTRANCE TO BURRARD INLET, VANCOUVER

Photo. Frank

on the Atlantic side are small but, like those on the Gulf side of New Brunswick, they are notable for salmon. Most of the towns of the province are seaports, and in the great days of the sailing ship, clippers were built here and sent out into the seven seas.

A few miles from Wolfville, on the Basin of Minas, is the picturesque, historic village of Grand Pré, situated on the banks of the Gaspereau. From this one-time home of the Acadians, can be seen the frowning face of Mount Blomodon, around which cluster many Micmac legends. See *GRAND PRÉ*, Vol. IX, page 4764.

Prince Edward Island, the smallest of the provinces, is separated from the mainland by Northumberland Strait. The land is comparatively flat, nowhere reaching an elevation of more than 450 ft. The rich red soil produces excellent potatoes, although the island is perhaps better known because of its fox farms and lobster canneries.

Cape Breton, forming part of Nova Scotia politically though not geographically, is a picturesque region surrounding the beautiful Bras d'or lakes which are connected with the sea by two natural channels and the St. Peters ship canal. Numerous Scots who settled here became fishermen, like their forefathers; others helped to develop the rich coalfields of Sydney, Inverness, and Richmond. Steel works near Sydney, the principal town, are fed with ore from Newfoundland and Cape Breton coal.

Grand Manan and Campobello are the principal islands in Passamaquoddy Bay, at the entrance to the Bay of Fundy. The former is the resort of artists who go there to paint its striking rock scenery. Campobello is more pastoral in its appeal. Both islands are the home of fishermen. Here one gets some idea of the extraordinary tides of the Bay of Fundy, which, however, are even more spectacular at the head of the bay. On tidal streams that empty into the bay, schooners sail in to the sides of wharfs and a few hours later lie on the red mud 20 ft. or 30 ft. below. These same tides are responsible for the "bore" (see *BORE*, Vol. I) on the Petitcodiac River, and the "reversible fall" at St. John. The reversible fall drops downstream at low tide and upstream at high tide.

Sable Island, off the coast of Nova Scotia, has treacherous shoals. It is a long, low, sandy island that is wasting away rapidly.

Anticosti Island (see article Vol. I), in the Gulf of St. Lawrence, although nearly twice the size of Prince Edward Island, has only a handful of inhabitants.

The Magdalen Islands, also in the Gulf of St. Lawrence, have been known since the days of Jacques Cartier. A low, sandy group, they once belonged to Newfoundland, but since 1774 have formed part of the province of Quebec. Their inhabitants are all engaged in the fisheries.

Main Continental Canada. Having disposed of the physical features of the

south-eastern area, an outlying part of the Dominion, it will be convenient to deal with the rest of continental Canada as a unit.

The Precambrian Shield. The most conspicuous geological feature of Canada is the Precambrian Shield. This vast area, consisting of "the oldest rocks exposed on the earth's surface," includes most of the country east of a line running from Lake Winnipeg to Great Bear Lake, except the extreme southern parts of Ontario and Quebec, part of the southern coast of Hudson Bay, and the Maritime Provinces. Its average elevation probably does not exceed 1500 ft., and the greatest known elevations are along the northern coast of Labrador. The surface is generally rugged, and dotted with innumerable lakes. One fairly typical area of 250 sq. miles in western Ontario contains 700 lakes.

The Precambrian Shield is of economic interest because of its incalculable wealth in minerals. One comparatively small region in its eastern part, in northern Ontario and Quebec, has put Canada into the first rank of the world's producers of gold. The mines of the Sudbury district in Ontario contain the world's largest reserves of nickel ore. At the other end of the Shield, on Great Bear Lake, pitchblende is being mined for the production of radium, and silver is obtained as a by-product. Precious minerals have been found at widely-scattered points throughout the Shield, but so small a proportion of the region has been prospected that no one can forecast even approximately what this part of the Dominion may some time yield in mineral wealth.

Habitable Canada. South of the Precambrian Shield in eastern Canada lie the St. Lawrence Lowlands, consisting largely of the valley of the St. Lawrence River and the older part of Ontario, from Ottawa to Windsor. Between the Shield and the Rocky Mountains lie the Great Plains. West of the Rockies are found a number of long valleys running approximately north and south. These lowlands, plains, and far western valleys, together with parts of the Maritime Provinces, are the regions of the Dominion in which population is mainly centred, and there can be no doubt that whatever the future growth of the population of Canada most of it will continue to be found here.

The Canadian Rockies. The Rockies and the other mountain ranges of British Columbia, that together are known as the Cordilleras, have compressed that part of the country into something resembling a crumpled sheet of paper. (See ROCKY MOUNTAINS, Vol. VII.) The Columbia, Kootenay, Okanagan, and other valleys help to provide the rest of the country with fruit, while from

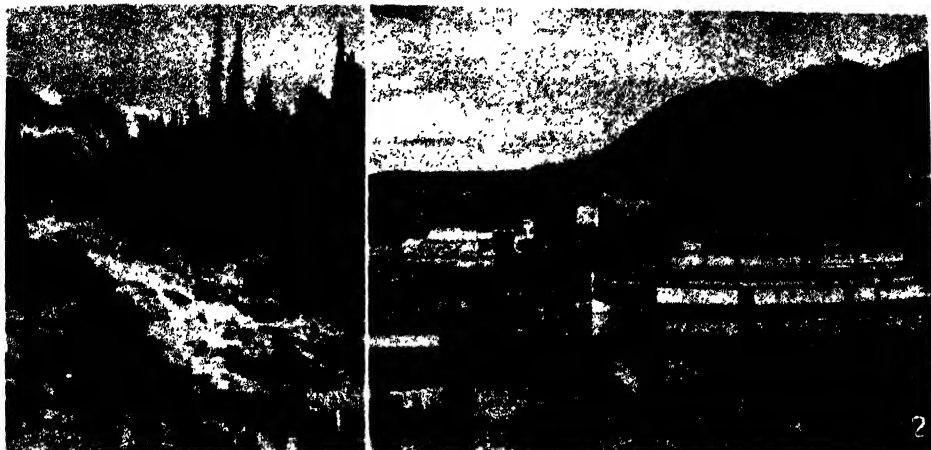
the sides of the mountains are obtained the raw materials for such great industries as the Trail smelter. Most of the population of British Columbia is, however, still concentrated on the Pacific coast, as that of the Maritimes is around the Atlantic coast, that of Quebec and Ontario in the valley of the St. Lawrence and of the Great Lakes, and that of the Prairie Provinces along the lines of the two transcontinental railways.

The Canadian Rockies have in recent years become known to thousands of tourists because of the National Parks—Banff, Jasper, Yoho, Waterton, and others. (See PARKS, CANADIAN NATIONAL, Vol. IX, page 4797.) Here each summer people gather from all parts of the Dominion, the United States, and elsewhere to enjoy the beauty and bracing atmosphere of the mountains, to study their plant and animal life, to climb such famous peaks as Assiniboine, Hector, Cathedral, Athabaska, Temple, Robson, Columbia, Sir Donald, and Hungabee.

Practicable roads and trails lead through primeval forests, by the banks of rushing streams, along the shores of mountain lakes of unbelievable colours, up to alpine meadows and mountain passes which were both necessary and famous in the days of the fur trade. The passes include Athabaska, Howse, Yellowhead, Simpson, and others like Kicking Horse and Crow's Nest, associated with the history of transcontinental railways.

Lakes. The lake area of Canada amounts to 228,000 sq. miles. This includes the Canadian part of the Great Lakes, nearly 34,000 sq. miles. Other large lakes include Nipigon, Abitibi, Simcoe, Lake of the Woods, Rainy, and Nipissing, in Ontario; Mistassini, Minto, Kaniapiskau, St. John, Clearwater, and Apiskigamish, in Quebec; Cedar, Etawney, Island, Winnipeg, Manitoba, Winnipegosis, Southern Indian, Moose, and Reindeer, in Manitoba; Athabaska, Wollaston, Cree, Peter Pond, and Lac la Plonge, in Saskatchewan; Claire, Lesser Slave, and Cold, in Alberta; Atlin, Babine, Kootenay, Okanagan, and Stuart, in British Columbia, and Aberdeen, Great Slave, Great Bear, Dubawnt, Martre, and Yathkyed, in the North-West Territories. Many of these lakes are dealt with more fully in separate articles.

Rivers. Any account of the rivers of Canada should begin with the St. Lawrence (see article, Vol. IX, page 4822), one of the great rivers of the world. Of its principal tributaries, the Saguenay rises far to the north, as do also the St. Maurice and the Ottawa; the Chaudière, St. Maurice, and Richelieu drain country to the south between the St. Lawrence and the international boundary. This entire water system



PHYSICAL FEATURES

The Dominion of Canada faces three oceans and, with an area of more than 3,500,000 sq. miles, ranks in size among the first half dozen countries of the world. Two vast water systems reach into its heart. 1. The head of Asulkan River, British Columbia. 2. Carcross, Yukon. Gold is still the most important product of Yukon, but coal and silver are also of importance. 3. Jersey cattle on the Milton Highlands of Nova Scotia. 4. Percé village on the Gaspé Peninsular. 5. Coastal cliffs at Rustico Cape. 6. A prairie homestead. 7. Suwash Rock, Vancouver.

Official News Bureau; Canadian National Railways; Canadian Pacific Railway



IN THE PRAIRIE PROVINCES

An aerial view of The Pas, Manitoba, showing the town and the Saskatchewan River

Photo Canadian Government

has been associated with transportation since white men first settled in this part of the continent. Explorers, missionaries, fur traders, and war parties travelled by canoe up the Saguenay to the height of land and by portage to other streams that took them down to Hudson Bay; or up the Richelieu to Lake Champlain and so to the Hudson; or up the Great Lakes and by one of several portage routes to the Ohio or the Mississippi; or up the Ottawa to Lake Huron and Lake Superior, and by way of Grand Portage or the Kaministiquia to Lake of the Woods and Lake Winnipeg.

Lake Winnipeg is itself a great central reservoir, from which water routes lead in every direction. It has been demonstrated many times that a man can travel in a canoe from Lake Winnipeg, with nothing more than an occasional portage, north to the Arctic, west to the Pacific, east to the Atlantic, north-east to Hudson Bay, or south to the Gulf of Mexico. His route in the first case might be—there are several alternatives—up the Saskatchewan to Cumberland House, then north by the old portage to the Churchill, up that river to Methye portage, down the Clearwater to the Athabaska, down the Athabaska to Lake Athabaska, down the Slave to Great Slave Lake, and down the Mackenzie to the Arctic. In the second case, he would ascend the Saskatchewan to the upper waters of either its northern or southern branches, and descend the Columbia to the Pacific. In the third, he would ascend Winnipeg River to the Lake of the Woods, follow the waterways along the international boundary to Lake Superior, and by way of the Great Lakes or the old Ottawa route to

the lower St. Lawrence. In the fourth, he would use the old Hayes route of the fur traders to Hudson Bay, or he might go by way of the Nelson. In the last, he would paddle up Red River, portage to the upper waters of the Mississippi, and descend that great river to the Gulf of Mexico.

Waterfalls. Important not only from the scenic point of view but also as the source of valuable water power, the waterfalls of Canada must not be overlooked. They include the Canadian half of Niagara (Horse shoe Falls) in the Niagara River (see *NIAGARA FALLS*, Vol. VI); Takkakaw, Twin, and Emperor Falls in the Rocky Mountains; Virginia, in the South Nahanni River, N.W.T.; Alexandra, in the Hay River, N.W.T.; Montmorency, near the city of Quebec. The Grand Falls in Labrador is in Newfoundland territory.

Islands. It remains to say something about the islands of Canada, other than those already described on its eastern coast. There are many small islands on the Pacific coast of the Dominion, but the most important are Vancouver, on which is situated Victoria, the capital of British Columbia, and the Queen Charlotte Islands. The mountain range which forms the backbone of Vancouver Island extends north through the Queen Charlotte group. Mining, lumbering, and fishing are carried on in both Vancouver Island and the Queen Charlotte Islands.

The more important of the islands on inland waters are Manitoulin, on the north side of Lake Huron, the Thousand Islands of the upper St. Lawrence, and Orleans, a short distance below Quebec.

In Hudson Bay, James Bay, and Ungava

Bay are Southampton, Coats, Mansel, Nottingham, Belcher, Akimiski, and Akpatok islands. In the far north are the immense islands of the Arctic Archipelago: Baffin, Ellesmere, Victoria, Banks, Devon, Melville, Prince of Wales, King William, Bathurst, Sverdrup, Somerset, and Prince Patrick. The uttermost outposts in Canada are reached on the Canadian Government steamer that sails each summer with supplies, mail, and reliefs to the various posts of the Royal Canadian Mounted Police in the Arctic Archipelago. The settlement nearest to the North Pole is Craig Harbour, on Ellesmere Island.

PICTOU. A town in Nova Scotia, founded in 1789, and incorporated in 1873. The earliest settlements in this part of the province, however, go back to 1763, when a group of settlers from Pennsylvania arrived, and to when the *Hector* landed a number of families from the Highlands of Scotland. In the days of the sailing ship, Pictou was an important seaport. Population, 3152 (1931).

PLACENTIA. A seaport of Newfoundland, on the east side of Placentia Bay. It has railway connection with St. John's. It was founded by the French in 1626 and strongly fortified, and for years withstood the attacks of British squadrons. It was the capital of the French colony on Newfoundland in the seventeenth century. Finally it came under British rule with the rest of the colony, by the Treaty of Utrecht. Throughout part of the eighteenth century the Governor of Nova Scotia was also Governor of Placentia. Population, 1119 (1935).

PLAINS OF ABRAHAM. The Plains, near the city of Quebec, were the scene of the decisive battle of 13th September, 1759, when Wolfe and the British forces defeated Montcalm and the French. Both leaders were mortally wounded. The ancient capital of French Canada was surrendered to the British general, and a few months later the colony itself was added to the British Empire. Named after Abraham Martin, a Quebec pilot who owned part of these lands, the Plains have been set apart as a national park, and were in 1908 the scene of the Tercentenary celebration of the founding of Quebec.

PLANT LIFE. The Dominion of Canada lies entirely within the Temperate and Arctic zones. At a geologically recent period, most of its territory was covered with a heavy continental glacier, sometimes attaining a thickness of 4000 ft. Most of the present native plants of Canada constitute a young flora, composed mainly of immigrants from the south that reclaimed the northern country after the recession of continental ice and the return of warmer climate.

These immigrants were former inhabitants of Canada pushed south by the advance of the ice. However, a minority of Canadian plants seem to be remnants of an older flora formerly widely distributed across the continent, and now restricted to the Rocky Mountains, the Arctic Archipelago, the high mountains of coastal Labrador, and to some local situations about the Gulf of St. Lawrence and the Great Lakes. These isolated spots, for one reason or another, have not been swept and denuded with the rest of the land by continental ice, at least during the last glacial episodes. The remaining plants of these unglaciated areas include several hundred species, some of which (for example, Victorin's gentian, Gaspé aster, and others) are remarkable for their beauty.

In addition to the native vegetation whose two-way origin has just been outlined, there are several hundred species which have been introduced by the white man, through accident or design. Most of these are European; such as the ox-eye daisy and the orange hawkweed. Others, including the sunflowers, belong to the West, mainly to the Prairie Provinces, and have been brought into the now deforested districts of the East by transcontinental railways. Galinsoga, the city weed, has travelled north on the heels of the banana trade, and is typical of the ways of a small group of tropical adventurers. Other species, such as the rapidly spreading leathery knot-weed, though surely not native, are of unknown origin. Many ornamental plants such as wild pink and musk mallow, food plants, such as Jerusalem artichoke (see *ARTICHOKE*, Vol. I) or drug plants such as Jimson weed have escaped from cultivation. Some of these newcomers are highly undesirable and are giving great trouble to agriculture. Only a few of these pests need be mentioned: the Canadian thistle, Russian thistle, sow thistle, and the mustards.

Eastern Canada. Canadian plants, like those of any other country, are not uniformly distributed, nor are they grouped according to their own family relations.

Travelling from east to west, one crosses very different botanical provinces. The cool region about the Gulf of St. Lawrence is remarkable for its northern maritime plants. Many of them, for instance the kelpwort, are identical with or resemble closely the denizens of European Atlantic seashores; other maritime plants, including grasses, sedges, and composites, are truly native; a small, but interesting group, well typified by the seabeach *Senecio*, is of Asiatic relationship.

The enormous stretch of the tides in the Bay of Fundy makes southern New Brunswick notable for the great development of brackish marshes and the attendant

saltmarsh vegetation. Growing in gravels of the St. John River are such striking plants as Brunet's milk vetch, Lake Huron tansy, and Gillman's golden-rod. The seashore of south-eastern Nova Scotia is fringed with sea-level brackish peat bogs where maritime and bog types live together. The south-western part of the province is renowned for coastal plain relics such as curly grass, in reality a tiny fern. Cape Breton Island has interesting local species, derelicts of an older flora. Prince Edward Island has nothing peculiar except Atlantic relics such as the maritime *Atriplex*. Isolated in the Gulf of St. Lawrence are the Magdalen Islands, tiny bits of the old Atlantic continental shelf, low shattered cliffs of gray and red sandstones, more or less linked or surrounded by long lines of dunes. Rich in maritime and sand-loving plants, the dunes have also retained from their former continuity with the Atlantic coastal plain such characteristic plants as the broom crowberry and the bayberry. Along the seashore of the northern part of the Gulf of St. Lawrence, alpine relics such as the delicate Laurentian primrose and Cordilleran relics such as the sumptuous Mingan thistle hold their own against the aggressive northern plants of the tundra or of the spruce forest.

At the portals of the St. Lawrence River, Anticosti Island emerges from the sea. It is a bleak, low, limestone table 135 miles long, covered with a dense spruce forest and extensive peat bogs. It has its share of such plant relics, commonly associated with non-glaciated areas, as showy *Antennaria*, *Anticosti* golden-rod, and Victorin's golden-rod.

North of the river, the northern coniferous forest clings to the granitic rocks of the Laurentian Shield and carries almost to the Arctic Circle its endless succession of spruce, fir, and birch, broken only by a network of clear, swift rivers, and thousands of lakes teeming with animal and plant life.

South of the Laurentian Shield and of the St. Lawrence River, the spruce forest gradually passes to the hardwood Appalachian forest where sugar maple, white pine, and yellow birch are dominant.

Depressed between and limited by the Laurentian Plateau and the first Appalachian buttressed hills, as a picture in a heavy frame, lie the Champlain lowlands, a magnificent flood plain, formerly covered with a dense deciduous or mixed forest, now for the most part given over to agriculture. The stately American elm, bur oak, shagbark hickory, and other trees, thrive everywhere in pastures or along fences as reminders that the forest is but momentarily checked, that it is the natural cover of this rich alluvial

land which would immediately go back to its primeval condition should man permit it.

The St. Lawrence River itself, on account of its carrying power, its shallow and extensive shoals, its sandy or marshy borders, and its tidal or maritime shores, constitutes an important environment for higher plant life. Its different districts: maritime, estuarine, alluvial, and rapid-water, are separately controlled by a set of particular ecological conditions, and display very different plant associations.

The maritime or salt-water area of the St. Lawrence is endowed with most of the truly Atlantic salt-marsh or seashore species, including grass wrack, glasswort, sea blite, sea lungwort, sea lavender, and sea rocket.

Remarkable in plant life are the flats of the estuarine section of the St. Lawrence, swept twice a day by strong fresh-water tides. The peculiar rhythm or balance of the nutritional and mechanical conditions has apparently been instrumental in producing types specially adapted to this situation. Among these plants are Victorin's gentian, bald willow herb, and northern beggar-ticks. All of them are propagated by seeds adapted to float on tidewater. Above the tidal line thrive a score of local evening primroses.

The estuarine section of the St. Lawrence ends on the west with the tideless waters of Lake St. Peter. From Montreal to this lake, the river flows lazily through a wide flood plain, eroding as it goes a heavy mantle of sand and glacial and marine clays.

The banks and shoals in this part are favourable places for the growth of a variety of aquatic and water-loving plants. Most of them are native, but some have been introduced from the Old World. Among the native plants are the water plantains; the cotton tree; a great diversity of willows, tall grasses, sedges, and bulrushes; the numerous and biologically important pondweeds; the several species of arrowleaf, the bur reeds; the cat's-tails; the eelgrass; the water-weed; and several gregarious horse-tails. See **BULRUSH**; **HORSE-TAIL**; **PONDWEED**, etc.

The native vegetation of streams was rich before the coming of the white man, but it was somewhat lacking in colour. This deficiency was made up by the introduction from the Old World of the purple loosestrife (which see) and the pink flowering rush, which have painted afresh the banks of the alluvial parts of the St. Lawrence River.

From the Great Lakes to Montreal, the St. Lawrence goes through a series of rapids, a condition unfavourable to most types of plant life. The shores of the Great Lakes have a diversified flora of various origin. Most remarkable is the presence in this



CANADIAN PLANT LIFE

Canada lies within the temperate and Arctic zones. Most of the native plants constitute a young flora, mainly immigrants from the south, which reclaimed the country after the recession of continental ice.

1. Moosewood. 2. May Apple. 3. Paint Brush and Hellebore. 4. Purple Loosestrife. 5. Tuberous Water Lily. 6. Prickly Pear, the only cactus-like plant in Canada. 7. Royal Lady's Slipper, found in boggy areas.

Photos: Victoria; Canadian Official News Bureau

fresh-water area of such maritime plants as the sea pea, kelp, and sea rocket, that have persisted from a former salt-water condition. The flora of the Great Lakes region resembles that of the eastern region just described: coniferous forest to the north, northern hardwood forest to the south. But a small tract of land in southern Ontario, centring about Niagara Falls, although a part of the hardwood forest, is really an outpost, a penetration of the more southern so-called Carolinian flora characterized by black walnut, magnolia, red mulberry, sycamore, and sassafras, all trees not found elsewhere in Canada.

The Prairie. A few miles east of Winnipeg, midway between the two oceans, appears the prairie, a general term for the vast grass-covered area of Manitoba, Saskatchewan, and Alberta. The prairie is limited to the

east and north by the coniferous forest, and to the west by the foothills of the Rocky Mountains.

In its most typical development, the prairie is essentially treeless except in valleys, where river beds are fringed with poplars. Shrubby plants, such as the silver-berry, prickly rose, snow-berry, service-berry or Saskatoon, and a host of others occur in low thickets.

The herbaceous vegetation of the prairie is one of the most distinct in the world. Among the species are a host of asters, buffalo grass, sunflowers, gum plant, pasque-flower, golden-rods, and St.-John's-worts. See **ASTER**; **GOLDEN-ROD**; **ST.-JOHN'S-WORT**; **SUNFLOWER**.

Due to poor drainage and subsequent concentration of salts, the prairie is dotted with numerous alkali flats. As these flats go dry,



FLORA OF AN UPLAND VALLEY

The mountain in the background is Sir Donald. It is seen from Upper Cougar Valley, in Glacier National Park, British Columbia.



CANADIAN TREES

Canada is remarkable for the magnificence and extent of its forests. One square mile out of every three is occupied by trees.

1 Red cedar 2 Western cedar, one of the giants of the Pacific Coast 3 White pine, a characteristic tree of eastern Canada 4 Douglas fir These trees grow to between two and three hundred feet in height.

Photos Canadian Pacific Railway, Victoria

there develops such typical salt-marsh vegetation as glasswort, ditch grass, seaside crowfoot.

The virgin prairie is becoming a thing of the past, giving way to wheat fields, the leading crop of Canada. With a yield of nearly half a million bushels, Canada has become the greatest wheat-exporting country of the world. See *AGRICULTURE AND FARMING*, Vol. IX, page 4702.

The Western Mountains. In the foothills of the Rocky Mountains, prairie species meet with sub-alpine forms, the results being a rich flora. Ascending the foothills, the prairie plants gradually disappear and are replaced by sturdy mountain species; the herbaceous plants grow taller, shrubs appear, and real forests are established.

The Rocky Mountains. The lower reaches of the Rocky Mountains are covered with forests characterized by white spruce, pines, alpine fir, and Douglas fir (see *FIR*; *PINE*;

SPRUCE). The vegetation above tree-line is rich in species. It has the general alpine characteristics, and includes alpine timothy, spring beauty, marsh marigold (which see), sweet coltsfoot, arnica (which see), and others. Still higher, the plants are decidedly more alpine, and many species, including willows, drabas, anemones, rock cresses, saxifrages, and milk vetches, ascend to the snow-line.

The Selkirk. The Selkirk Mountains (see separate article) have the character of a high, level plateau from which peaks rise. Here are real alpine meadows receiving abundant rainfall. The Selkirk forest is characterized by such trees as western cedar, Douglas fir, western hemlock, and Engelmann's spruce.

The Coast Range. Although the Coast Range is similar biologically, it is nevertheless considered a distinct botanical province on account of a number of native plants found nowhere else in Canada. These natives

are largely everlastings, arnicas, groundsels, asters, flea-banes, and other composites. In the valleys of the Coast Range, the typical forest vegetation is sub-tropical in appearance.

The British Columbia Forest. The gorgeous British Columbia Forest has several remarkable features. It is predominantly coniferous; leafy types play but a minor role. The conifers belong to two different groups. First, there are the pines, spruces, and firs, related to the Atlantic conifers; for example, the western white pine is the replica of the eastern white pine. The other group, which includes the Douglas fir, the western white cedar, and *Chamaecyparis*, is more exotic. Here are species related to, or identical with, Asiatic types. This second group forms the bulk of this forest which in a sense is biologically Asiatic.

The British Columbia Forest is remarkably dense. Trunks 200 ft. to 300 ft. high often stand a few feet apart. Douglas fir (commercially known as British Columbia fir) reaches a height of 200 ft. to 300 ft., with a diameter of 10 ft. to 12 ft.; western cedar reaches a height of 200 ft., and a diameter of 15 ft. The enormous size of these trees is a direct response to the most favourable conditions of humidity and mild temperature.

In the virgin forest the luxuriant undergrowth shares in some measure the great size of the tree types, and with the moss-covered and rot-resistant fallen trunks forms an impenetrable jungle. The bracken attains great size beside the gracefully arching vine maple, the salal, and the stinging devil's club.

Vancouver Island and the Pacific Coast. Most of Vancouver Island belongs botanically to the Coast Range, but in the southeastern part, where a dry belt is developed, there is a penetration of the Californian flora illustrated by the madroña, Garry's oak, and the gorgeous European broom, now thoroughly at home along the Pacific Coast from California to British Columbia, where it is in June the most showy plant of the whole landscape.

Northern Canada. In a straight course from coast to coast, one does not get the complete story of plant life in Canada. The factor of temperature is so important that plants are distributed in general according to their temperature requirements in life zones running parallel to the Equator.

The preceding survey of Eastern plants was mainly made well within the Canadian (or Laurentian) zone, a fairly definite unit of plant and animal life.

The northern borders of the Canadian zone are roughly: a line running from the southern end of James Bay to the south of Lake

Mistassini, then along latitude 51° to Cape Whittle, and finally along the north shore of the Gulf of St. Lawrence. From James Bay westward the line follows the northern limit of the balsam fir to the Great Slave Lake and the mouth of the Mackenzie River.

Hudsonian Zone. North of this line, the Hudsonian zone extends to tree limit. It is a rolling surface, with thousands of lakes and ponds, slow streams or roaring torrents rushing down granitic ledges, and great areas of sphagnum bogs. The vegetation is uniform everywhere. The 20,000 or 30,000 years since the end of the great glaciation period have not been sufficient for local species to evolve.

The trees of the Hudsonian Zone (approximately in the order of their northern limits, which is also probably the order of their arrival in the territory after the glacial episode) are: black spruce, white spruce, tamarack, jack pine, balsam fir, poplar, aspen, and bird cherry. The first named three have almost the same range. The spruces at their northern limits may attain an age up to 500 years, and near or within the Arctic Circle, a height of 40 ft. to 50 ft. Usually they are much smaller; sometimes even depressed or trailing.

The Arctic Zone. Farther north the forest stops, with the black and white spruces as the outermost sentinels. North of the tree line in the Arctic zone is a treeless, rocky wilderness alternating with extensive boggy areas. This is the tundra whose immensity, solitude, silence, and merciless uniformity are extremely impressive. In summer this area has a rich covering of vegetation, embracing over 230 species of flowering plants. 37 per cent are common to Canada and Spitsbergen, and 26 per cent are circum-polar. These plants of the tundra include sixteen species of saxifrage, seven louseworts, five drabas, twenty-three composites, twenty-two grasses, and others.

Summary. Plant life in Canada is represented by approximately 5000 species of flowering plants, ferns, and fern-like plants. Some of them like the bunchberry are ubiquitous, reaching from coast to coast, others, like the ram's-head lady's slipper, are rare and local. If to these 5000 species are added the non-vascular cryptogams (see *CRYPTOGAMS*, Vol. II) of all descriptions (bacteria, slime moulds, fungi, fresh-water algae, marine algae, lichens, liver-worts, and mosses) there are more than 10,000 plant species, wonderfully diversified, making their home in the Dominion.

These plants are grouped mainly in the prairies and forests. The prairies are gradually being displaced by agriculture; the

forests are also being partly cleared for farms, and partly preserved for their timber. Canada is remarkable for the magnificence and extent of its forests. One square mile out of every three is occupied by trees. The traveller entering the country through the gateway of the St. Lawrence River and proceeding by train to Winnipeg rides in the almost continuous coniferous forest for 1500 miles. The yearly drain on Canadian timber through fire, pests, and industrial consumption amounts to about 4,000,000,000 cubic feet. Biologically, the great forests are the governing and binding elements of the country's rich plant and animal life. Culturally, Canada is best defined by her forests; they are her most distinctive feature; they explain her past history and point to the trend of her future.

PLESSIS, JOSEPH OCTAVE (1763-1825). Distinguished ecclesiastic. He was born near Montreal and in 1806 became Roman Catholic Bishop of Quebec, in 1818 being raised to the rank of Archbishop. During his long career he took a very active part both in church matters and in public affairs, the colleges of Nicolet and St. Hyacinthe having been founded in his term of office.

POLITICAL ORGANIZATION. Canada has a democratic form of government. The people elect representatives who constitute the ultimate law-making power within the orbit of the constitution; the action of the executive is ineffective unless it has the support of Parliament; the judiciary is independent. Canada is self-governing and the real ties of Empire to-day are common sentiment and common interest.

The Constitution. The British North America Act is sometimes spoken of as the constitution of Canada. Really it is only part of the constitution. True, by passing the Act in 1867 and creating the Dominion of Canada the British Parliament also created the offices of government. But it did not define the relationship between them. Nowhere in the British North America Act, is there anything about the relation that the legislature, executive, and judiciary shall bear to each other. Like the British constitution, the largest part of the Canadian constitution is unwritten. And the principles of this unwritten constitution are precisely those of Great Britain. Creatures of custom and convention, they are full of flexibility to meet changing needs and altering circumstances.

In the written constitution of Canada are found the principles of Canadian federalism. Power is divided between the provincial governments and the Dominion Government, each sovereign in its own sphere. Section 91 enumerates the powers of the Federal

Parliament; Section 92, those of the provincial legislatures. Chief among the former are those to make laws for the peace, order, and good government of Canada; the regulation of trade and commerce; and the raising of money by taxation. Among the latter are direct taxation for provincial purposes and property and civil rights in the province. Section 93 gives the provinces exclusive power over education. Both can legislate regarding immigration and agriculture, and if there is a conflict here Dominion legislation overrides that of the provinces. All powers not enumerated in Section 92—the residue of powers—belong to the Dominion. The highest Court of Appeal, however, in interpreting these sections has tended to increase the power of the provinces at the expense of the Dominion.

Since the British North America Act is an Act of the British Parliament, that body, up to 1931, alone had the right of amending it. The Statute of Westminster (1931), however, gave the Dominions the right to amend their own constitutions.

The Executive. The executive stands at the head of the political system. The Governor-General is the formal head of the government. The Cabinet directs the enforcement of laws. The Civil Service actually applies legislation.

The colonial Governor was the real ruler of the colony. But with the development of Dominion self-government he gradually lost his powers until to-day his descendant, the Governor-General, is little more than a figure-head. He is now the "representative of the Crown, holding in all essential respects the same position in relation to the administration of public affairs in the Dominion as is held by His Majesty the King in Great Britain." He is appointed by the King on the advice of the Dominion Government.

The Cabinet dominates Canadian politics, though neither the British North America Act nor any other law gives an inkling of this fact. It is by custom and convention that the Cabinet has acquired its power.

The Government is formed by the members of that political party which has gained a majority of the seats in the House of Commons as the result of a general election. The leader of this party becomes Prime Minister, and he selects his cabinet from the Members of Parliament. Theoretically he can choose any of his supporters. Actually his choice is limited. There are some whose ability makes it impossible to neglect; and there are others whose claims based on long service to the party cannot be denied. Moreover, it has become almost a convention of the Constitution to give representation in the Cabinet to race, religion, and locality.

(To forget a province, to overlook French Canada, or to fail to consider the Roman Catholics might withdraw the support of powerful groups from the party.)

The principles of cabinet government are the same in Canada as in Great Britain. The British North America Act provides that there shall be a council to aid and advise the Governor-General. It is called the King's Privy Council for Canada. The members are appointed for life and it is composed largely of past and present cabinet ministers. In practice its functions are exercised by the Cabinet. Though technically a committee of the Privy Council, in personnel it is a committee of Parliament—one, however, which

department is the deputy minister whose duty it is to supervise the routine work and carry out the policy of the responsible head of the department. Under him are the principal technical, administrative, and executive officers, and finally the lesser officers, clerks, typists, and others.

At one time appointments were of a political nature. But in 1908 and 1918 the Government divested itself largely of the power of appointment and entrusted it to a Civil Service Commission which now consists of three members appointed by the Governor-General in council. A system of competitive examinations was established, and gradually the service is being withdrawn completely from politics and a higher standard of efficiency is being attained.

Parliament. The Dominion Parliament consists of two houses, the House of Commons and the Senate.

By the Dominion Elections Act of 1920 uniform electoral qualifications were established for Dominion elections throughout Canada. All British subjects, male and female, from twenty-one years old, who have resided in Canada a year, have the right to vote or to be a candidate at Dominion elections. There are 245 electoral districts each electing one member of the Dominion Parliament. Quebec elects sixty-five members, the other provinces having a number in proportion to their population, re-adjustment in their number of members taking place every ten years on the basis of the decennial census. A maximum of five years may elapse between general elections.

The House has its own rules. It elects its own Speaker to preside over its proceedings, who shall vote only in case of a tie. Twenty members constitute a quorum, and all motions are decided by a majority vote of those present. The functions of the House are to make laws, to grant money for the public services, and to control the action of the Cabinet.

Bills are public or private. The former deal with the country as a whole; the latter with particular localities or persons. Every clause of every bill must be discussed and agreed to by a standing committee, a special committee, or the committee of the whole House; and every bill must be passed by the House three times before it becomes law. If it survives this ordeal it goes to the Senate where it goes through an identical procedure. And if it is passed by the Senate it becomes law upon being signed by the Governor-General.

All Bills, except appropriation and tax Bills, may originate in either House. finance Bills can originate only in the House of Commons. Yet Parliament cannot vote



MARTELLO TOWER, HALIFAX
Photo Canadian Pacific Railway

guides, directs, and practically controls the actions of the House of Commons. Yet it is answerable to this same House and must resign if it loses its support. This principle of collective responsibility whereby the Cabinet acts as a unit and must stand or fall as such is the backbone of the whole political system. If a minister disagrees with his colleagues, it is his duty to resign. Each minister (except a minister without portfolio) is the political head of a department, and in addition to directing its work must draft and pilot through the House all bills falling within its scope. The Prime Minister assumes control of the ministry of external affairs.

For purposes of administration there are a number of departments (finance, labour, external affairs, and others). At the head of each department is a cabinet minister who is responsible to Parliament for the acts of his department.

Then there is a body of permanent officials who carry on the business of the department, and who take no part in politics. This is the Civil Service. The permanent chief of each



GROUP OF CANADIAN "MOUNTIES"
Photo Wide World

money nor impose taxes except at the request of the Cabinet; nor can the Cabinet do so except with the authority of Parliament. Each year the Government introduces and Parliament passes (usually with amendments) a bill authorizing the expenditure of definite sums of public monies for definite purposes, and a bill authorizing the imposition of definite taxes.

Any member has the right of addressing a question to any minister about the public affairs for which he is responsible. Parliamentary committees and royal commissions are from time to time appointed. These devices supply the members with material upon which criticism of Government policy may be based. At the beginning of every session the debate on the speech from the Throne (which is prepared by the Cabinet and read in Parliament by the Governor-General) gives an opportunity for criticism. Another major occasion is in the debates on the estimates.

The Senate is an undemocratic element of the constitution. A Senator must be at least thirty years of age, must possess a \$4000 property qualification, and must be a resident of the province he represents. The Senate consists of 96 members: Ontario and Quebec, 24 each; the Western provinces, 6 each; Nova Scotia and New Brunswick, 10 each; Prince Edward Island, 4. Senators are appointed for life by the Governor-General, which means in effect by the Prime Minister.

All Bills must pass both Houses. In case of disagreement, provision is made for a conference between the two houses, and if no agreement is reached the bill fails to become law. The Senate may initiate any Bill but a Finance Bill. Legally the senate can amend or reject any Bill. But a Rule of the Standing Orders affirms the right of the House to control exclusively financial legislation. The Senate has never by its actions denied this right. The number of Cabinet Ministers in the Senate as compared with that in the House has always been small. This must necessarily be so if the Government is to be responsible to the elected representatives of the people. Some frown upon the presence of any Minister in the Senate. The practice now is for all Ministers holding portfolios to sit in the House.

The Judiciary. The British North America Act gave the provinces the right to administer justice in the province, to create provincial courts both of civil and criminal jurisdiction, and to regulate procedure in civil matters. The Dominion appoints the judges of Superior, District, and County Courts of each province, pays their salaries and regulates the procedure in criminal jurisdiction. The Act also provided for the establishment by the Dominion of a general Appellate Court and any additional court desired.

The minor provincial Courts are completely under provincial jurisdiction. Although for

purposes of appointment, removal, and salary the County (District in Alberta and Saskatchewan) Courts are under Dominion authority, they are otherwise controlled by the provinces. Their jurisdiction is limited both in civil and criminal cases, but they nevertheless exercise varied and extensive powers in numerous matters closely affecting the daily life of the people.

Above these, and appointed and controlled in the same manner, are the Superior Courts of the provinces, the nomenclature and organization varying from province to province.

Finally there are two Courts—the Supreme and Exchequer Courts of Canada—which are completely under Dominion

Statute of Westminster to amend its constitution.

Provincial Government. The political organization of the provinces is similar to that of the Dominion. Analogous to the Governor-General is the Lieutenant-Governor who is the formal head of the provincial government. He is appointed by the Governor-General in Council for a term of five years and is answerable to the Governor-General in Council. Twice have Lieutenant-Governors been recalled on the ground that they failed to adhere to the rules of responsible government. Nevertheless they are no mere creature of the Federal Government for their constitutional position cannot be altered by a Federal or provincial act.

Each province is governed according to the principles of responsible government. Quebec is the only province which has a two-chamber legislature; all the other legislatures have one chamber. Each province has its own civil service. The exclusive right of altering its constitution rests with the legislature of the province. The provinces get their revenues by direct taxation and by provincial subsidies from the Dominion in the form of a fixed annual sum and so much per head of population.

The Party System. The two major national parties are the Liberals and the Conservatives. Traditionally the former is a low tariff party, the latter a protectionist one. Yet when there is a change in Government there is no substantial change in tariff policy. For the Liberals have to cater to their supporters in the East, and the Conservatives to the West. Time and again they have stolen planks from each other's platform. Recently in matters of social legislation their policies have not differed fundamentally. The real political struggle is not between parties, but between different groups of the same party. Instead of bargaining in the open, the various sectional interests seek compromise in the party caucus. The result is a platform so vague and general that it satisfies everybody without committing the party to anything very definite. In practice Liberalism and Conservatism are almost indistinguishable.

No third party has as yet gained a foothold in the country. In the past they have been sectional in nature, and have derived their support largely from the farming population. Arising in times of economic stress, they have died away when the crisis was over. The newest of the third parties is the socialistic Co-operative Commonwealth Federation, which, unlike other third parties, derives its support mainly from the urban working classes and is a national party.



FROM THE OLD COUNTRY TO THE NEW
A group of British youths bound for Manitoba
under the auspices of the Church Army.
Photo Canadian Government

jurisdiction. The Governor-in-Council may refer such important questions of constitutional law as he sees fit to the Supreme Court; disputes between the Dominion and a province or between two provinces may be taken to it; and generally all such matter as may under the terms of Dominion legislation be appealed from provincial courts. The Exchequer Court has admiralty jurisdiction and hears petitions of right. Courts exercising divorce jurisdiction exist in all the provinces except Quebec whose inhabitants must secure a special Act of Parliament. See LAW, Vol. IX, page 4770.

Outside and above these, as the court of final appeal, is the Judicial Committee of Privy Council of Great Britain. See PRIVY COUNCIL. Appeals may be taken to the Privy Council directly from the Supreme Courts of the provinces either by special leave from the provincial courts, if they think fit, or as of right in certain specified cases. Those from the Supreme Court of Canada are only by special leave. The Privy Council has declined to receive criminal appeals. And the Dominion can if it so wishes abolish all appeals to the Privy Council under the power given it by the

POND, PETER (1740-1807). Explorer and fur trader. Born in Connecticut, he served for a time in the army and about 1765 entered the Western fur trade. He spent the years 1775 to 1778 exploring and trading in the Saskatchewan and Athabaska districts. He prepared several manuscript maps of the Western country.

PORTAGES. See COMMUNICATION AND TRANSPORT, Vol. IX, page 4744; MANITOBA, Vol. V.

PORT ARTHUR. A city in the Thunder Bay district of Ontario, situated at the head of Lake Superior. It is a railway centre and has excellent water shipping facilities. It is a collecting and distributing point for the grain-growing Canadian North-West, and has one of the world's largest grain elevators. Port Arthur also receives and ships vast quantities of coal, iron ore, paper, and pulp. There are blast furnaces, a dry dock and shipbuilding plant, sawmills, foundries, and coal and ore docks. Population, 19,818 (1931).

PORT-AU-BASQUES. The most westerly of Newfoundland towns, near Cape Ray, on Cabot Strait, and the western terminus of the Newfoundland Railway. The French made a settlement here in 1734. Steamer connection is made with Sydney, N.S., the easternmost point on the railway system of Canada. The inhabitants are for the most part engaged in the cod fishery. Population, 808 (1935).

POWELL, WILLIAM DUMMER (1755-1834). Jurist, born in Boston. He started the practice of law in Montreal in 1779; was appointed a judge of the Court of King's Bench for Upper Canada in 1795; and succeeded to the office of Chief Justice in 1816. He became a member of the Executive Council in 1807.

PRE-CAMBRIAN SHIELD. See PHYSICAL FEATURES, Vol. IX, page 4803.

PRESCOTT, ROBERT (1725-1816). Soldier and statesman, born in Lancashire. He served in the army under Amherst at Louisbourg and under Wolfe at Quebec, 1758-1759, rising to the rank of Lieutenant-General. He succeeded Dorchester as Governor-General of Canada in 1796, and the following year he was made Governor also of Nova Scotia and New Brunswick. He returned to England in 1799.

PREVOST, SIR GEORGE (1767-1816). Soldier and statesman, born in New York. He was appointed Governor of Nova Scotia in 1803, and in 1812 became Governor of Canada and Commander-in-Chief of the military forces in British North America. His views as to the conduct of the war of 1812-1814 clashed with those of General Brock. He was recalled to England in 1815.

PRINCE EDWARD ISLAND. See article, Vol. VII.

PROWSE, DANIEL WOODLEY (1834-1914). Historian. He was born in Newfoundland, studied law, and was called to the Newfoundland bar in 1858. He sat in the Legislature from 1861 to 1869. He was appointed a judge of the Central District in 1869. His heart was, however, in the writing of history. He is the author of *History of Newfoundland*, *Short History of Newfoundland*, and many papers and articles dealing with phases of the history of Newfoundland.

QUEBEC, CITY OF. See article, Vol. VII.
QUEBEC, PROVINCE OF. See article, Vol. VII.

QUEBEC, SIEGES OF. The city of Quebec has lived through five sieges. David Kirke attacked with a fleet in 1628-1629 and compelled Champlain to surrender the fortress. In 1690 Sir William Phipps sailed up the river with thirty-two ships, but was forced by Frontenac to abandon the attempt. In 1759 Wolfe, with the army, and Saunders,



QUEBEC BRIDGE FROM THE AIR

Despite the fact that ice closes the river in winter, Quebec is an important port, for even the largest steamers can come up the St. Lawrence River to the harbour.

Photo: Canadian Official News Bureau

with the fleet, laid siege to the fort throughout the summer and finally won a victory on the plains of Abraham. Both Wolfe and Montcalm were mortally wounded. In 1760, after the battle of Ste Foy, Murray retreated within the walls of Quebec and Levis laid siege to the town. The appearance of a British fleet forced him to abandon the attempt. In 1775 the American General Montgomery led an army against Quebec and laid siege to it. He was killed in an assault on the last day of the year, and in the spring of 1776 the siege was raised.

QUEBEC CONFERENCE. A meeting in the city of Quebec in October, 1864, to

which there is reason to believe that he may have reached James Bay. In 1665 he went to England and was instrumental in bringing about the organization of the Hudson's Bay Company. Between that time and his death he made several voyages to Hudson Bay. After wavering several times in his allegiance between France and England, he finally settled down with a pension in England.

RAGENEAU, PAUL (1608-1680). Jesuit missionary, born in Paris. He was sent to Canada in 1636 and worked for several years among the Hurons and later among the Iroquois. In 1650 he was appointed superior of the Jesuit missions in Canada. He worked as a missionary until 1666, when he returned to France.

RAMEZAY, CLAUDE DE (1657-1724). French soldier and statesman. He commanded the troops in Canada in 1699, became Governor of Three Rivers in 1690, and Governor of Montreal in 1703.

REBELLIONS OF 1837 1838. See CANADA, Vol. 11.

RED RIVER. Sometimes called the Red River of the North, to distinguish it from the river of the same name in Texas. Its length to the head of the Cheyenne is 545 miles, and from Lake Traverse 355 miles. It rises in North Dakota and empties into Lake Winnipeg. It was discovered by La Vérendrye in 1733. The same explorer discovered its principal tributary, the Assiniboine.

REGINA. Capital of the province of Saskatchewan and formerly of the North West Territories. It was founded in 1882 and was named by the Duke of Argyll after Queen Victoria. It was, for many years, the headquarters of the Royal Canadian Mounted Police. It was incorporated as a city in 1903. Population, 53,209 (1931).

When the city was laid out, a part of the northern district was set aside for manufacturing and warehouses. Regina has built and owns railway tracks in this area, by means of which every factory and warehouse can have freight cars brought to its doors. This convenience has attracted a large number of industrial firms to the city. In this area are grain elevators, foundries, machine shops, an oil refinery, steel-wire works, agricultural-implement warehouses, and many other establishments. Regina is an important distributing centre and has the largest trade in agricultural implements of any city in Canada.

The Parliament building is an imposing structure on a beautiful site south of Wascana Lake. The Collegiate Institute and



REGINA
Capital of Saskatchewan
Photo Canadian Pacific Railway

arrange the terms of Confederation. Canada, Nova Scotia, New Brunswick, Newfoundland, and Prince Edward Island were represented. Sir Etienne Taché presided and among the delegates were such famous statesmen as John A. Macdonald, George Brown, Alexander Galt, Georges E. Cartier, Charles Tupper, D'Arcy McGee, Samuel L. Tilley, and Oliver Mowat. The principal controversy arose over the decision as to whether the union was to be federal or legislative, the decision being to adopt the latter. The conference finally adopted seventy-two resolutions, which formed the basis of Confederation.

RADISSON, PIERRE ESPRIT (1635-1710). French explorer, born in Paris. He went to Canada in 1651 and settled at Three Rivers. He was captured by the Iroquois the following year, but managed to make his escape. Between 1654 and 1660 he made several expeditions westward and explored the country between Lake Superior and the Mississippi. In 1661 he made another journey west and north, in the course of

the Anglican, Regina, and Campion colleges are in the city.

REID, ROBERT GILLESPIE (1842-1908). Railway contractor. He was born in Scotland, and came to America in 1871. That year he built the International Bridge across the Niagara River near Buffalo; in 1880 he built the bridge across the Colorado River at Austin, Texas; and in 1882 the international railway bridge across the Rio Grande from Texas to Mexico. He also built many of the bridges of the Canadian Pacific Railway, including the Iachine bridge in 1886.

Reid was given the contract to build the Newfoundland Railway in 1893. He was to operate it for fifty years, after which it was to become his property. He paid Newfoundland \$1,000,000; also provided a fleet of coastal steamers; built an electric street railway for St. John's, and an electric light system and paved some of the streets. In 1923 Newfoundland bought out the Reid interests for \$2,000,000.

RICHFLEW RIVER. See QUEBEC, Vol. VII.

RICHMOND, CHARLES LENNOX, FOURTH DUKE OF (1764-1819). Statesman. He was Lord Lieutenant of Ireland from 1807 to 1813, and Governor-General of Canada between 1818 and 1819. His wife gave the famous ball on the eve of the Battle of Waterloo. He died of the bite of a mad fox, near the village of Richmond, in Upper Canada.

RITCHIE, SIR WILLIAM JOHNSTONE (1813-1892). Jurist, born in Annapolis, Nova Scotia. He was called to the bar of New Brunswick in 1838; became a judge of the Supreme Court of New Brunswick in 1855; Chief Justice of New Brunswick in 1865; a Puisne Judge of the Supreme Court of Canada in 1875; and Chief Justice of Canada in 1879.

ROBERTS, SIR CHARLES GEORGE DOUGLAS (born 1860). Poet and novelist, born near

Fredericton, New Brunswick. He was a professor in King's College, Windsor, Nova Scotia, 1885-1895. He and his cousin, Bliss Carman, were members of a group of outstanding Canadian poets. Author of a number of books of history and fiction, he is chiefly known



SIR CHARLES ROBERTS

as a poet. Some of his books of verse are *Orion*, *In Divers Towns*, *Songs of the Common Day*, *The Book of the Native*, *Collected Poems*.

ROBINSON, SIR JOHN BEVERLEY (1791-1863). Jurist. He was a member of a family that took a prominent part in the public life of Canada for several generations. He was a member of the Family Compact; represented York (Toronto) in the Assembly of Upper Canada in 1821; was appointed Chief Justice of Upper Canada in 1829; and Speaker of the Executive Council in 1830.

ROBSON, MOUNT. See ROCKY MOUNTAINS, Vol. VII.

ROCKY MOUNTAINS. See article, Vol. VII.

ROYAL WILLIAM (SHIP). The first vessel to cross the Atlantic wholly under steam. She was built at Quebec in 1830, and after coaling at Pictou sailed for England in August, 1833, taking twenty-five days from Pictou to Gravesend. A tablet commemorating the event stands in the entrance to the Library of Parliament in Ottawa.

RYERSON, EGERTON (1803-1882). Educator and clergyman, born in Upper Canada. He entered the Methodist ministry. He edited the *Christian Guardian* almost continuously from 1829 to 1840. He was instrumental in establishing Victoria College, and became its first president. In 1884, he was appointed chief superintendent of education for Upper Canada and did much to mould the educational system of the provinces. He edited the *Journal of Education* from 1848 to 1876. He was the author of many controversial pamphlets, and played an important part in the public life of his time.

SABLE ISLAND. See PHYSICAL FEATURES, Vol. IX, page 4803.

SAGUENAY RIVER. A river of the province of Quebec, which rises at the head of the Peribonka River, east of Lake Mistassini, and after a course of 405 miles empties into the St. Lawrence River at the ancient village of Tadoussac. The Saguenay was discovered by Jacques Cartier in 1535. It was ascended by Champlain to Chicoutimi in 1603. It was for many years a route of fur traders to northern Quebec and Hudson Bay. To-day steamers bring cargoes of bauxite to aluminium plants on its upper waters. The plants are operated by power from a neighbouring hydro-electric plant.

ST. BONIFACE. A city on the Red River in Manitoba, opposite to and connected by bridges with Winnipeg. It is the seat of St. Boniface College and of the Roman Catholic archbishop of Manitoba. Manufactures include meat products, flour, lumber, linseed oil, paint, and dyes. There are stockyards, and the city possesses one of the largest flour mills in the British Empire. Hydro-electric power is supplied by the Winnipeg River. Population, 16,305 (1931).

ST. CLAIR, LAKE. A lake between Huron and Erie, connected with the former by the St. Clair River and with the latter by the Detroit River. Its area is 460 square miles. The name was given by La Salle in 1679, because he reached it on the feast of St. Claire.

ST. GERMAIN-EN-LAYE, TREATY OF. Signed between France and Great Britain in 1632. It restored Quebec, Port Royal, and Cape Breton to France.

ST. JOHN, City of New Brunswick. See article, Vol. VII.

ST. JOHN RIVER. A waterway of New Brunswick, which rises on the boundary between Quebec and Maine and empties into the Bay of Fundy after a course of nearly 400 miles, for a fourth of which it forms the international boundary between Canada and the United States. It was discovered by Champlain in 1604. Its earliest settlers were Acadians, who were followed by emigrants from New England both before and after the American Revolution.

At St. John, just before the river enters the Bay of Fundy, is the phenomenon known as the Reversing Falls. With every turn of the tide the falls in their narrow gorge are reversed.

ST. LAWRENCE RIVER. A waterway which drains the basin of the Great Lakes

and the south-eastern part of Canada. Its drainage basin has an area of over 500,000 sq. miles. The St. Lawrence takes its rise at an outlet of Lake Ontario, and flows in a north-easterly direction to enter the Gulf of St. Lawrence 750 miles distant. The original source of the waterway is, however, in Minnesota, from whence the St. Louis River flows to enter Lake Superior at Duluth. The St. Mary's River joins Lake Superior to Lake Huron, the St. Clair and Detroit rivers connect Lakes Huron and Erie, and the waters of Niagara divide Lakes Erie and Ontario.

SAINT-VALLIER, JEAN BAPTISTE DE LA CROIX CHEVRIERES DE (1653-1727). Bishop. He was born in Grenoble, France, and went to Canada in 1685. Three years later he succeeded Laval as Bishop of Quebec, which office he filled up to the time of his death.

SANDHAM, HENRY (1842-1910) Artist, born in Montreal. He studied under Jacobi and other artists. He devoted himself for a time to magazine illustrating, but his reputation rests rather upon his historical paintings. He was a charter member of the Royal Canadian Academy of Arts.

SASKATCHEWAN. See article, Vol. VII.

SASKATOON. A city in the province of Saskatchewan, on the South Saskatchewan



ST. JOHN

The largest city and chief port of New Brunswick.

Photo: Canadian Official News Bureau

River. The name, after a berry that grows abundantly in the neighbourhood, was given to the infant settlement by John N. Lake in 1882. The first post office was established in 1884. It is the site of the University of Saskatchewan. It is a railway centre and a commercial and manufacturing city of importance. It has over 200 wholesale houses, is a large shipper of wheat, and has a great grain elevator erected by the Dominion Government. Ironworking, garment manufacture, and the making of rolled oats are among the leading industries. Population, 43,291 (1931).

SAUNDERS, SIR CHARLES (1713-1775). British naval officer, born in Scotland. He entered the Royal Navy and rose to the rank of admiral. In 1759 he was Commander-in-Chief of the fleet which co-operated with Wolfe in the siege of Quebec, and his masterly handling of his war vessels in the narrow waters of the St. Lawrence contributed largely to the defeat of Montcalm and the conquest of Canada. He was commander-in-chief in the Mediterranean in 1760, and became First Lord of the Admiralty in 1766.

SAUNDERS, WILLIAM (1836-1914). Agriculturist, born in Devonshire, he emigrated to Canada in 1848. In 1886 he was appointed director of the Dominion Experimental Farms and continued in that office until 1911. Among many important contributions to science and the economic life of the country was his development of the famous Marquis wheat.

SEATON, SIR JOHN COLBORNE, FIRST BARON (1778-1863). British statesman. He served under Sir John Moore in the Peninsula campaign, and with Wellington at Waterloo. He was appointed Lieutenant-Governor of Upper Canada in 1829 and Commander-in-Chief of the forces in Canada in 1835. He suppressed the rebellion in Lower Canada, and became Governor in 1839. He was promoted to Field-Marshal in 1860.

SECORD, LAURA (1775-1868). Wife of James Secord, of Queenston, Ontario, and an historic figure in Canada. During the war of 1812-1813 she overheard the plans of an American officer to surprise a Canadian force at a place called Beaver Dam. By tramping twenty miles through wood and swamp, she was in time to warn Colonel FitzGibbon, who in turn surprised and defeated the Americans.

SELKIRK MOUNTAINS. See Plant Life, Vol. IX, page 4809.

SELKIRK SETTLEMENT, also known as the Red River Colony. It formed part of what is now the province of Manitoba. It was founded by the Earl of Selkirk in 1811. The first party of colonists came from Scotland in 1812; a second party arrived in

1813; a third in 1814; and a fourth in 1815. The colonists suffered privations for several years.

SELWYN, ALFRED RICHARD CECIL (1824-1902). Geologist, born in England. After serving on the staff of the Geological Survey of Great Britain, he became Director of the Geological Survey of Victoria, Australia, in 1852. He went to Canada in 1869 as Director of the Geological Survey of Canada, and served in that capacity until 1895. He was a charter member of the Royal Society of Canada.

SEVERN RIVER. A river of Ontario that rises near the Manitoba boundary and empties into the west side of Hudson Bay, after a course of 420 miles. Fort Severn, of the Hudson's Bay Company, stands at its mouth.

SEWELL, SIR JONATHAN (1766-1839). Statesman and jurist, born in Cambridge, Massachusetts. He was educated at Oxford, and after practising law in Quebec from 1789 he became Solicitor-General of Lower Canada in 1793 and two years later Attorney-General. In 1808 he was appointed Chief Justice of the Court of King's Bench; and from 1830 to 1858 he was Chief Justice of Lower Canada. Meanwhile he had become a member of both the Executive and Legislative Councils in 1808 and President of the latter the following year.

SHAUGHNESSY, THOMAS GEORGE, FIRST BARON (1853-1923). Railway executive, he was by birth an American from Milwaukee. He entered the service of the Canadian Pacific Railway in 1882 and rose to be President. In his day one of the outstanding figures in Canadian transport, he carried on the traditions of those who had laid the foundations of the great transcontinental railway system.



LORD SHAUGHNESSY
Photo: Central

SHERBROOKE. A city in the eastern townships of Quebec, on the St. Francis River. It was founded by David Moe and other pioneers about 1800; was given its present name, after the then Governor-General, in 1818; and was incorporated as a town in 1852. Important asbestos mines are near Sherbrooke. Population, 28,933 (1931).

SHERBROOKE, SIR JOHN COAPE (1764-1830). Statesman, born in Nottinghamshire.

He served in the army under Wellington, in the Peninsular War, 1809. He was appointed Governor of Nova Scotia in 1811, and became Governor-General of Canada in 1816. During his short period of office (he returned to England in 1818) he dealt wisely and well with the problems of the colony.

SIMCOE, JOHN GRAVES (1752-1806). Colonial administrator, born in Northumberland, he went to America, and commanded the Queen's Rangers, 1771. He was appointed Lieutenant-Governor of Upper Canada in 1791 and took an active part in building up the colony.

SIMPSON, SIR GEORGE (1792-1860). Explorer and administrator, born in England. He entered the service of the Hudson's Bay Company and went to Canada in 1820. The following year, on the union of the older organization with the North West Company, he became governor of the enlarged corporation. Taking control at a critical time, his resourcefulness, tact, and indomitable will put new life into the Company. He travelled continually about the West, usually in a small canoe and at headlong speed. He made a trip around the world and described it in his *Narrative of a Journey Round the World in the Years 1841 and 1842*.

SKEENA RIVER. A northern British Columbia river that empties into the Pacific, after a course of 335 miles. The name is derived from an Indian word meaning a "divide." Prince Rupert, the western terminus of the Canadian National Railway, stands on an island near its mouth.

SONGS, CANADIAN. Officially the national anthem of Canada is "God Save the King," as in other parts of the British Empire. It is customary, however, to sing a distinctively Canadian song, "O Canada," and another, "The Maple Leaf Forever," at public meetings. The former ranks decidedly first in public esteem. It was written in French by A. B. Routhier and has been translated several times into English. The music is by C. Lavallée. The words and music of "The Maple Leaf Forever" are by Alexander Muir.

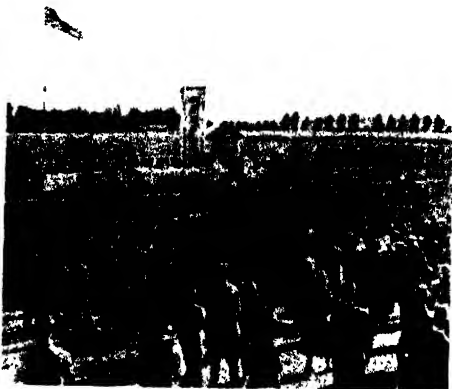
Of the two well-known Canadian boat songs, one beginning "Faintly as tolls the evening chime" was composed by the Irish poet, Thomas Moore, while on a visit to Canada. The other, which opens "From the lone shieling of the misty island," has been variously attributed to Sir Walter Scott, John Galt, William Dunlop, James Hogg, Christopher North (John Wilson), J. G. Lockhart and Hugh Montgomerie.

SOUTHAMPTON ISLAND. An island in the northern part of Hudson Bay. Its area is approximately 17,800 square miles. It was named, after the third Earl of South-

ampton, by Luke Foxe, who discovered it in 1631. An expedition, sponsored by Cambridge University, went there in 1936 to study the geology, flora and fauna of the island.

SPORTS AND PASTIMES. In common with many other phases of Canadian life, the pursuit of sports and pastimes reflects the influence of British tradition as well as proximity to the United States, so that the national games of both these countries are popular, in varying degrees, throughout the Dominion. Canada has, however, two games which are national in point of origin as well as popularity—ice hockey and lacrosse.

Known as "the fastest game in the world," ice hockey (see below) is played during the winter by small boys on frozen ponds, by



WOODBINE RACECOURSE, TORONTO
Photo Canadian Pacific Railway

local leagues in community rinks, and by professional teams in arenas seating, in the larger cities, thousands of spectators. As a sporting spectacle, the popularity of the Canadian game has spread in recent years to the United States and Europe.

Lacrosse (which see), an open-air field game, is played with rules similar to those of hockey but the ball is kept in play in the air and passed by means of netted sticks. Although a fast game, its general popularity has been overshadowed by baseball and the pursuit of the game is confined to a comparatively limited number of amateur clubs and school teams.

Rugby football, as played in Canada, is also peculiar to the country and it is interesting to note that in Canada originated the slightly different American variety of football which has become a leading national game in the United States.

Ice Hockey. An obvious development of the field game well known in Great Britain, ice hockey was first played in Canada about



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SPORTS AND PASTIMES

Canadian sports reflect the effects of British tradition and the proximity of the U.S.A. Two games, ice hockey and lacrosse, are national in origin as well as popularity. 1. Lacrosse match in progress. 2. Park Slide, Montreal. 3. Canadian Rugby. It resembles the American game more than English Rugby. 4. Curling. Quebec and Ottawa are the only cities in the world where it is played with "irons" as well as granite stones. 5. Ski-ing near Mt. Rundle, Banff. 6. Ice hockey. 7. Fishing on Kootenay Lake.

Photos: Canadian Official News Bureau, Canadian Pacific Railway, Associated Screen News

1878, when the first rules for the game are believed to have been written by two students of McGill University, Montreal. It is certain that in the late 'seventies and early 'eighties, the McGill University Club, the Victoria Hockey Club of Montreal, and the Quebec Club of Quebec engaged in matches. The speedy game seized the popular fancy; other clubs were organized and hockey came into vogue throughout the Dominion.

Exhibition games by Canadian teams introduced the game into the United States in the early 'nineties, and many Canadian players have since taken up residence there for the purpose of playing hockey. Canadian students at the universities of Oxford and Cambridge were probably the first to play ice hockey, in the Canadian manner, in England in the early part of this century. Following the World War, the game was taken up in Continental Europe and was played at Paris, Berlin, Vienna, and in Switzerland.

Ice hockey has been a feature of the Olympic Winter Games since 1920, in which year, at Antwerp, the Falcons of Winnipeg won the Olympic Ice Hockey Championship. Canada was represented at each subsequent Olympic Winter Games, winning on each occasion until 1936, when the championship was won by England.

As a professional sport, ice hockey occupies a dominating position in Canada. The first openly avowed professional league was the National Hockey Association (1912-1917), which was superseded by the present National Hockey League. Professional hockey in Canada must be considered in conjunction with professional hockey in the United States, since there is no all-Canadian professional league. The existing professional leagues are—

- (1) The National Hockey League, operating teams in Montreal, Toronto, Detroit, Chicago, New York, and Boston.
- (2) The Canadian-American Hockey League, operating teams in Boston, Philadelphia, Springfield, (Massachusetts), New Haven, and Providence.
- (3) The International Hockey League, operating teams in Windsor (Ontario) and London (Ontario), Detroit, Cleveland, Buffalo, Syracuse, Rochester, and Pittsburgh.
- (4) The North West Hockey League, operating teams in Calgary, Edmonton, Vancouver, Seattle, and Portland (Oregon).
- (5) The American Hockey Association, operating teams in St. Louis, Kansas City, Missouri, Wichita, Oklahoma City, Tulsa, and St. Paul.

Each of these leagues governs its own affairs but is affiliated with the National Hockey League, which acts as a court of last resort if and when necessary.

Since the National League is the most important, the most coveted prize of professional hockey is the Stanley Cup, originally

presented as an amateur trophy in 1893 by Lord Stanley of Preston, then Governor-General of Canada. The playoffs for this trophy are the culminating features of each season.

Organized amateur hockey in Canada is controlled by the Canadian Amateur Hockey Association. For purposes of administration, a provincial governing body regulates affairs in each province and all of these are merged in the Canadian Association. Under the auspices of the provincial associations, local teams are organized into district leagues and

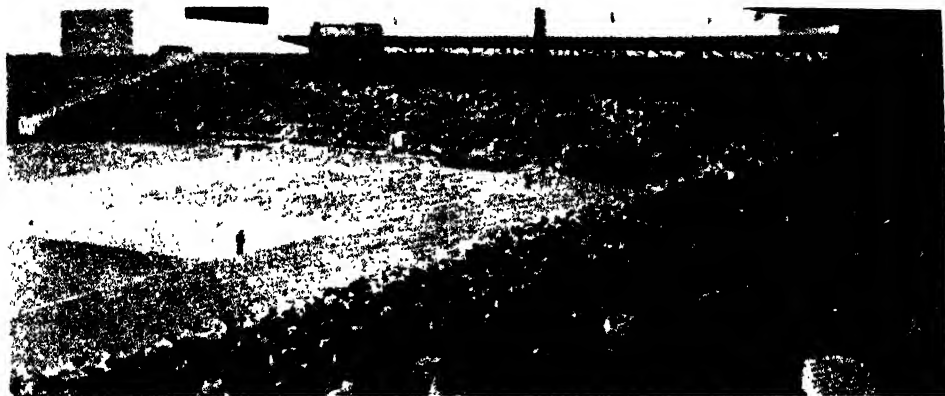


SNOW SHOE RACE
Photo Canadian Pacific Railway

in senior, intermediate, and junior groups. Winners of provincial championships play off annually for the Allan Cup, emblematic of the combined senior and intermediate Dominion championship. The John Ross Robertson Memorial Trophy is for the junior group. See ICE HOCKEY, Vol. IV.

Lacrosse. Lacrosse derives from a Canadian Indian game, the origin of which is lost in antiquity. The first French settlers in Canada found the Indians playing the game, which they called *baggataway* and which the French named *la crosse* because of the resemblance to a Bishop's crozier of the crooked playing stick.

The rules of the Indian game appear to have been very elastic. The size of the teams varied from a few on each side to hundreds, and, in some cases, teams of more than a thousand opposed each other. The size of the fields varied also, and since the lines were marked only by the positions of the medicine-men referees, games were likely to shift considerably in the course of play. *Baggataway* was a very strenuous affair, characterized by the general use of the



BASEBALL AT MONTREAL STADIUM

Introduced from the United States, this is now the leading summer game in Canada.

Photo Fox

sticks as weapons of offence, and injury to the players was common. In fact, even in the later civilized development of lacrosse the same primitive tendency has not been uncommon and may have contributed, in some degree, to the game's decline in popularity.

An interesting record exists in Canadian history of lacrosse being used as a military ruse. When Canada became a British possession many Indians maintained loyalty to the French. Among the leaders of these was Chief Pontiac who, on 4th June, 1763, invited the British garrison of Fort Michilimackinac to witness a lacrosse match between the Ojibway and the Sac tribes which, he pretended, was being held in honour of the birthday of the British king. The garrison was cautious enough to decline, but Pontiac said that he would hold the game within sight of the fort. The great match was composed of a thousand men to each team. The game drifted closer to the fort, but as drifting was a common characteristic of the game, the British were not alarmed until, when close enough, the Indians turned in a surprise attack and massacred the whole garrison.

It was not until 1867, when the National Lacrosse Union of Canada was organized, that anything approaching standardization of the rules was effected. In the latter part of the nineteenth century several Canadian touring teams introduced the game to England. Oxford and Cambridge played their first lacrosse match in 1903, and the game has since become a popular one in Great Britain. It is also played in some Canadian colleges. In Canada lacrosse has declined in popularity in recent years. A professional league was organized for one year, but was not successful.

About 1931, an indoor variety of lacrosse, called box lacrosse, was conceived. It employs teams of seven to a side. It was played by a professional league in eastern Canada for one season but was not successful. The game is popular on the Pacific coast, under the name of boxla. See LACROSSE, Vol. V.

Baseball. Baseball, introduced from the United States, is the leading summer game in Canada. It is played professionally by Montreal and Toronto clubs entered in the International League and by semi-professional teams in most of the larger cities. Local amateur leagues are common in all parts of the country. The playing rules are the same as in the United States.

Its allied game of softball is the general pastime of the playgrounds and parks and, in indoor and outdoor forms, is played widely by organized amateur leagues.

Football. Canadian Rugby football is a development of the English game. Its rules are peculiar to Canada, but it now resembles American football more than English Rugby. The English form of Rugby is played to some extent in Canada.

Association football, or "Soccer," as it is now more commonly known, was the standard football game in the United States until 1874, when McGill University challenged Harvard University to a game of Rugby. The Americans liked the game so well that it spread through all the colleges and caught the popular fancy to the practical exclusion of soccer.

Both the Canadian and American games have developed rules which differ from the English, principally in that there is less sustained action and more interference. The Canadian game differs chiefly from the American in the greater restrictions upon the

amount of forward passing and interference permitted; that three downs (instead of four) are required to gain ten yards; and that the counting for points is different. It is the customary autumn seasonal game of schools and colleges.

The game is not at present played professionally in Canada, and the organized amateur games are conducted along lines similar to those for amateur hockey, with provincial unions, district league, and senior, intermediate, and junior groups. The governing body is the Canadian Rugby Football Union, into which are merged the provincial organizations.

Badminton. This game was first introduced into Canada about 1890. It has



MOOSE HUNTER IN BLUE CRT. VALLEY,
ALBERTA

Photo: Canadian National Railways

steadily increased in popularity to the point that national competitions are held annually.

Curling. Curling has been played in Canada for many years, a fact which is indicated by a local peculiarity in the province of Quebec and the city of Ottawa, the only places in the world where the game is played with "irons" as well as with the standard granite stones. The Highlanders of Wolfe's army wanted to play curling to while away the tedium of winter garrison work in Quebec and, having no stones, it is said that they melted down French cannon to make substitutes of iron. At any rate, the "irons" survive to-day. The large Scottish population has assured the popularity of this essentially Scottish game in Canada. Provincial associations are all affiliated with the Royal Caledonian Club of Scotland, the rules of which hold sway. Provincial and Dominion championship events are contested annually.

Other Outdoor Games and Pastimes. Having a smaller degree of general appeal, all other games and sports in Canada are less highly organized than hockey, baseball, and football. Golf, tennis, and bowls enjoy a sufficient following to enable national or

provincial championship competitions to be held, but the games are more commonly followed as pastimes.

The English games of cricket, Association football (soccer), and Rugby football have their devotees in many centres, predominantly in Ontario and other parts where the percentage of English settlement is high. Cricket in particular has increased in popularity in recent years and is now the standard summer game in a few schools. Some of the larger cities support leagues of several cricket teams. None of the three English games mentioned has sufficient general popularity to achieve more than local competitive interest.

Fishing. In a country where no person lives very far from well-stocked lakes, streams, and forests, it is natural that hunting, fishing, camping, and canoeing should be the national pastimes in summer and autumn. Outdoor life of this nature is a popular form of holiday.

Sport fishing is obtainable in most parts of Canada. Trout of various species are the most widely distributed game fish, including the speckled or brook trout in the central and eastern portions and the Dolly Varden, rainbow, steelhead, cut-throat, and kamloops trout in the western sections. The lake trout, as its name suggests, is more common in lake waters.

The salmon is represented along the eastern coast rivers by the Atlantic salmon, identical with the highly-prized salmon of Great Britain and northern Europe, and on the Pacific coast by the king salmon, also known as the tyeo or Chinook salmon. Other varieties of Pacific salmon are unimportant from the sporting point of view.

Other important game fish in the central and eastern portions are the large-mouthed bass; small-mouthed black bass, muskellunge, a giant, formidable, game member of the pike family; and the wall-eyed pike. The last is more generally known in Canada as pickerel or dore, but is not to be confused with the small pike commonly called pickerel in the United States. Sea angling is enjoyed on the Atlantic coast with the giant tuna as the most sought prize.

Hunting. In Canada the term hunting embraces what is more commonly known in Great Britain as shooting, and includes the pursuit for sport of game birds and animals. Most typical of Canada is the sport of moose hunting, which is available in all provinces except Prince Edward Island. Native species of deer, white-tail (Virginia deer) in the eastern and central portions and mule and Columbia deer in the western areas, provide sport for thousands. Caribou and elk are now practically confined to the slopes of the

Rockies, where the grizzly bear, mountain sheep, and mountain goat are also found. The black bear is common throughout the forested parts of the country.

Since most of the waterfowl of North America breed in northern Canada, the hunting of ducks and geese is a general sport, but it is confined by law to an open season in the autumn when the southward migration of the birds is in progress. Upland game birds are chiefly the native varieties of grouse, snipe, and woodcock. In a few districts pheasants and the Hungarian partridge have been introduced.

All hunting and game fishing in Canada is regulated by provincial governments. Normal open seasons for hunting are in the autumn.

Mountaineering and Riding. The Rocky Mountains offer ample scope for the mountain climber and the Alpine Club of Canada has an extensive membership. The Rockies are also the field for camping trips on horseback and on foot and active clubs have been organized.

Horseback riding is not so general a pastime as might be expected, although most centres have their groups of enthusiasts. Montreal and Toronto support hunt clubs in the English manner, but the mounted pursuit of the fox has no well-founded tradition. In fact, when foxhounds are mentioned in Canada, the American foxhound is usually meant and fox-hunting usually means the pursuit of foxes on foot with the aid of hound and gun, although this is not as common a sport as in earlier days.

Winter Sports. In recent years, winter sports have become increasingly popular in Canada. Skiing leads and has practically superseded others in the Laurentian Mountains of Quebec and the Rockies, where the terrain is especially suitable. Before skiing took so strong a hold, snowshoeing was a popular pastime, and snowshoe clubs played a prominent part in the winter social life of French Canada. Many of the old clubs continue and foregather in their picturesque blanket-cloth uniforms for festive occasions, but the new generation has taken to the ski. The competitive forms of skiing—jumping, slalom (zig-zagging between obstacles), and cross-country races—increase in favour every season.

Tobogganing and skating are other winter pastimes which appeal to many. Sled-dog racing is not particularly common. Sled-dog "derbies" are held occasionally but are of comparatively local interest.

STEFANSSON, VILHJALMUR (born 1879). Explorer and writer, born in Manitoba. He took part in several expeditions, ethnological and geographical, to the northern coast of

Canada, under the auspices of Harvard and Toronto universities, 1906-1907, and for the Government of Canada, 1908-1912. He commanded the Canadian Arctic Expedition of 1913-1918, which resulted in important discoveries in the Arctic Archipelago. He wrote *My Life with the Eskimo*, *The Friendly Eskimo*, *The Northward Course of Empire*, *Hunters of the Great North*, *The Adventure of Wrangel Island*.

STIKINE RIVER. It rises in northern British Columbia and empties into the Pacific through Alaska, after a course of 335 miles. The mouth of the river was visited by Captain Cleveland in 1799; its upper waters were explored by John McLeod, of the Hudson's Bay Company, in 1834; and its lower waters by Lieutenant Pereleshin of the Russian navy, in 1863.

STRACHAN, JOHN (1778-1867). Churchman and educator, born in Scotland. He came to Canada in 1799 and became Bishop of Toronto in 1839. He was a man of aggressive personality and enormous energy, one of the leading spirits in what was known as the Family Compact, in opposition to such liberal leaders as Robert Baldwin and Egerton Ryerson. The establishment of King's College, afterwards the University of Toronto, was mainly due to his efforts. He became its first president. Later he founded Trinity College, afterwards a university, and now affiliated with the University of Toronto.

STRONG, SIR SAMUEL HENRY (1825-1909). Jurist, born in England. He came to Canada and was called to the bar of Upper Canada in 1847. He was appointed Vice-Chancellor of Ontario in 1869; became Puisne Judge of the Supreme Court of Canada in 1875; and was Chief Justice from 1892 to 1902.

SULTE, BENJAMIN (1841-1923). Poet and historian, born in Three Rivers, P.Q. He was employed for many years in the public service of Canada and was president of the Royal Society of Canada, 1904. One of the most prolific of Canadian historians, his works include *Histoire des Canadiens-Français*, *Pages d'histoire du Canada*, *Mélanges d'Histoire*, and *Histoire des Trois Rivières*. He wrote two volumes of verse, *Les Laurentiennes* and *Les Chants Nouveaux* (new songs).

SYDNEY. A city on the north-east coast of Cape Breton Island, Nova Scotia. It is noted for its coal trade and for its extensive production of iron and steel. It is the commercial centre for one of the principal coal-fields of Canada. Population, 23,089 (1931).

TACHE, ALEXANDRE ANTONIN (1823-1894). Roman Catholic Churchman. Born in Lower Canada, he entered the Oblate Order in 1844 and in 1851 became Bishop

of St. Boniface, Manitoba. In 1871 he was promoted to Archbishop. He took an important part in the events following the Red River Rebellion and the creation of the Province of Manitoba.

TALON, JEAN BAPTISTE (1625-1694). Statesman. He was born in Picardy, France, and in 1663 went to Canada as Intendant, an office roughly corresponding to that of the members of a modern government responsible for finance and commerce. He was the ablest of the Intendants during the period of French rule in Canada, and did much to encourage the building of ships on the St. Lawrence, the development of trade with the West Indies, and the cod fisheries. He has been described as a man of broad views, singular discretion, and indefatigable industry.

TASCHEREAU, LOUIS ALEXANDRE (born 1867). Statesman, born in Quebec. He practised law and entered public life in 1900. He became a member of the provincial cabinet in 1907, and from 1920 to 1936 was Prime Minister of Quebec.

TEMPLE, MOUNT. A peak in the Canadian Rockies. Its elevation is 11,626 ft. It was first climbed in 1894 by S. E. S. Allen, L. Frissell, and W. B. Wilcox.

THREE RIVERS, the French *Trois Rivières*. A city in the province of Quebec, at the mouth of the St. Maurice River. The first colonists settled there in 1633, and the following year a fort was built by Lavolette, who was considered the founder of the town. During the French period it was an important centre of the fur trade, and like Montreal, had its own governor. Population, 35,450 (1931).

THOMPSON, DAVID (1770-1857). Explorer, born in England. He entered the service of the Hudson's Bay Company in 1784, and for that organization and later for the North West Company he carried out a series of explorations and surveys that put him in the first rank of those who have helped to fill the blank spaces on the map of Canada. His manuscript journals, 1784-1850, as well as his great manuscript map of the West, are preserved in the Ontario Archives. J. B. Tyrrell edited the *Narrative of David Thompson*.

THORNTON, SIR HENRY WORTH (1871-1933). Railway executive, born in Indiana. He served on the staffs of various divisions of the Pennsylvania Railroad, 1894-1914. He was appointed general manager of the Great Eastern Railway in England, 1914. He filled various important positions during the World War and finally became Inspector-General of Transport. On the invitation of the Canadian Government he became chairman of the board of directors

and president of the Canadian National Railways.

TILLEY, SIR SAMUEL LEONARD (1818-1896). Statesman, born in Gagetown New Brunswick. He entered the provincial legislature in 1850, became a member of the cabinet in 1854, represented his province at the Charlottetown and Quebec Conferences, and became a member of the first Dominion cabinet after Confederation. He was Lieutenant-Governor of New Brunswick in 1873 and again in 1893.

TOWNSHEND, GEORGE, MARQUESS (1724-1807). British soldier. He served in the battles of Dettingen, Fontenoy, and Culloden Moor; commanded one of the divisions under Wolfe in the Siege of Quebec, 1759; and succeeded to the command after the death of Wolfe. He was Lord-Lieutenant of Ireland, 1767-1772, and was created Earl of Leicester in 1784 and Marquess Townshend in 1787.

TRADE, EXTERNAL. Canada is naturally a great trading country. Geographically it is in a strategic trading position close to the great United States market, and with outlets on both the Atlantic and Pacific. Its climate prevents the production of tropical and sub-tropical products, so it is necessary to import them as well as those manufactured articles which Dominion industries do not supply in sufficient quantity.

Enormous resources in agricultural land together with immense areas of timber land and, as yet, little exploited mineral wealth, facilitate Canadian export trade. Natural resources have been developed to such an extent that the production of farm, forest, mines, and associated industries, is far beyond the powers of domestic consumption. Notwithstanding Canada's small population it has been the world's fifth largest exporting nation in each year since 1926, with the exception of three years.

In imports Canada occupied fifth place from 1926 to 1930. In more recent years, with the unsettlement in world trade since the economic depression, it has ranked between eighth and eleventh.

The importance of foreign trade in the life of the Canadian people is further indicated by the high value of imports and exports per head of population. Imports *per capita* amounted to \$19.90 in 1868 and increased to a maximum of \$141.20 in 1921. Exports *per capita* were valued at \$14.38 in 1868 and reached a maximum of \$184.91 in 1918. Trade has subsequently registered declines, but still remains high as compared with that of most other countries.

Growth of Trade. Trade had beginnings in Jacques Cartier's barter for furs with the Micmac Indians of Chaleur Bay in 1534.

The trade of Canada, particularly since Confederation, has shown an expansion almost without parallel in the world in spite of brief periods of declines. In 1868 imports amounted to \$67,000,000 and exports to \$48,500,000, compared with \$1,266,000,000 for imports and \$1,364,000,000 for exports in the peak year 1929. Following the world economic crisis of that year the trade of Canada declined along with the contraction in world trade generally, but the upward trend has once more been established.

In comparing trade for different periods it is important to bear in mind that, because of changing prices, the dollar value does not necessarily represent exactly changes in the volume of goods. The figures of one period may have a different significance from those of another, because of low prices at one time and high prices at another. For example, the apparent stagnation of Canadian trade between the early 'seventies and the middle 'nineties of the last century was due in part to falling prices, and the later growth was accentuated by the rise in prices after 1897 and again during the war period, 1914-1921.

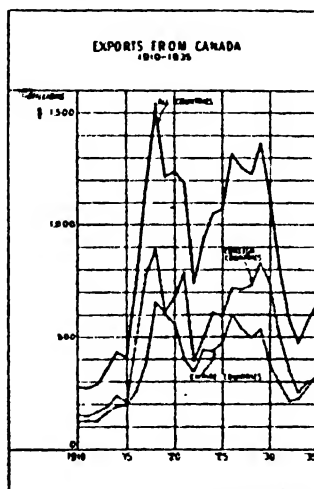
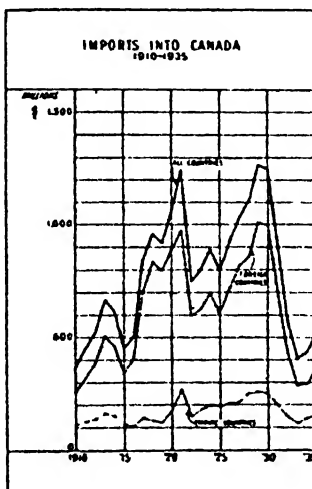
Similarly the declines after 1920 and 1929 were largely due to falling prices and represented only in part a real shrinkage in volume.

Balance of Trade. In early days, Canada had to borrow heavily from abroad in order to finance large building projects, of which railways were the most important. These borrowings took the form of large imports of materials and machinery for capital construction and resulted in a considerable excess of imports over exports. In later years the amount of borrowings declined relatively. Canada had to pay interest on the loans obtained and exports came to exceed imports. Of sixty-nine years since Confederation, Canada has had excesses of imports or unfavourable trade balances in thirty-eight, and favourable balances in thirty-one years. Favourable balances have been shown continuously with three exceptions annually since 1915.

Geographical Distribution of Canada's Trade. The external trade of Canada has always been carried on predominantly with the United Kingdom and the United States. In the early years, the United Kingdom,

which was then making extensive capital investments in Canada, supplied more than half of Canada's imports. The United States, always a close second in Canada's import trade, supplanted the United Kingdom in first place in 1876, and has maintained that position since, with the exception of the years 1880 to 1882 inclusive. Imports from the United Kingdom fell off sharply during the War. Imports from the United Kingdom and the United States for the fiscal year ended 31st March, 1936 represented 20.9 per cent and 56.8 per cent of total imports respectively.

The United Kingdom was Canada's



Courtesy Dominion Bureau of Statistics

principal customer from 1890 to 1920. In several more recent years, however, it has taken second place to the United States, but from 1932 to 1935 has maintained the position of Canada's premier market, doubtless in consequence of the preferences granted to Canada and the higher United States tariff. For the year ended 31st March, 1936, the United Kingdom accounted for 41.7 per cent of Canada's exports as compared with 36.5 per cent purchased by the United States.

Canada's trade with other British and foreign countries has shown a greater relative expansion in the present century than trade with the United Kingdom and the United States. Canada now sends her wares to all parts of the world and obtains supplies from every country.

Principal Imports. Marked changes have taken place in the character of the leading imports during the last half century due to development both in the industrial organization of Canada and in the goods consumed by its people. Many of the present-day

leading imports such as crude petroleum, automobiles and parts, artificial silk, electric apparatus, aluminium, and others were either non-existent or insignificant until comparatively recent times. The large growth in imports of farm implements coincident with increased domestic production of implements indicates the great agricultural expansion of Canada as well as the increasing mechanization of agricultural operations. The rise of these new items has relegated other items, which were important imports in earlier years, to a subordinate position to-day. On the other hand certain items such as coal, rolling mill products, machinery, and fruits, which have been among the leading imports for many years, maintain their position to-day because of the demand of expanding Canadian industry for materials and the improvement in means of transporting perishable commodities.

Canada's imports and exports by main groups for the fiscal year ended 31st March, 1936, are shown in the table below—

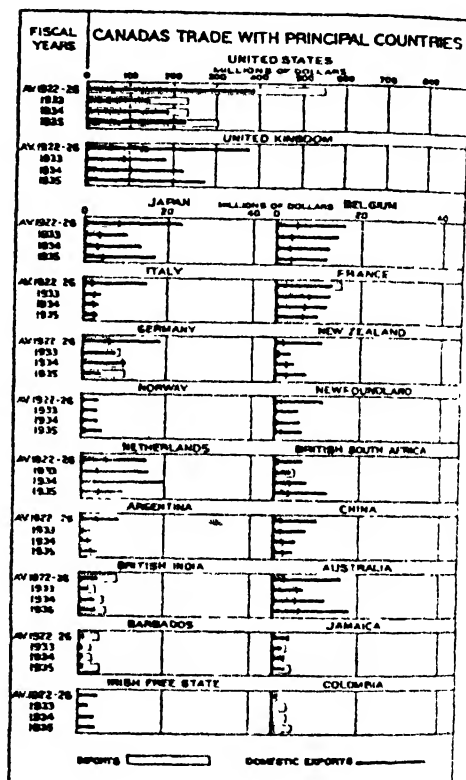
Groups	Imports	Exports
Agricultural and vegetable products	\$110,342,537	\$142,861,877
Animals and their products	24,314,220	100,932,110
Fibres and textile products	89,814,164	10,273,697
Wood, wood products, and paper	23,271,631	181,831,743
Iron and its products	114,253,715	52,368,057
Non-ferrous metal products	31,685,919	212,547,372
Non-metallic mineral products	105,421,236	19,081,643
Chemicals and allied products	20,919,921	16,018,391
Miscellaneous commodities	31,695,725	13,113,527
TOTAL	\$561,719,063	\$849,030,417

Principal Exports. Canada ranks high in the production and exporting of many staple products. In 1934, in the production of asbestos, nickel, and newsprint it led the world; in copper, gold, and zinc production it occupied third place; in the production of lead, fourth; in automobiles, fifth; and in wheat production, sixth. In export trade the Dominion led the world in 1934 in exports of asbestos, nickel, and newsprint. In wheat exports it ranked second, relinquishing its customary first place to Argentina only to regain its premier position in 1936. In exports of wheat flour, Canada held second place; third place in automobile exports; and fourth in exports of rubber tyres and wood pulp. Canada also ranks high as an exporter of lumber, fish, copper, barley, cheese, raw furs, whisky, meats, farm implements, cattle, gold, silver, rye, oats, rubber footwear, leather, and hides.

Canada's foremost export commodity is wheat, thanks to the great agricultural expansion of the Canadian West. Second in

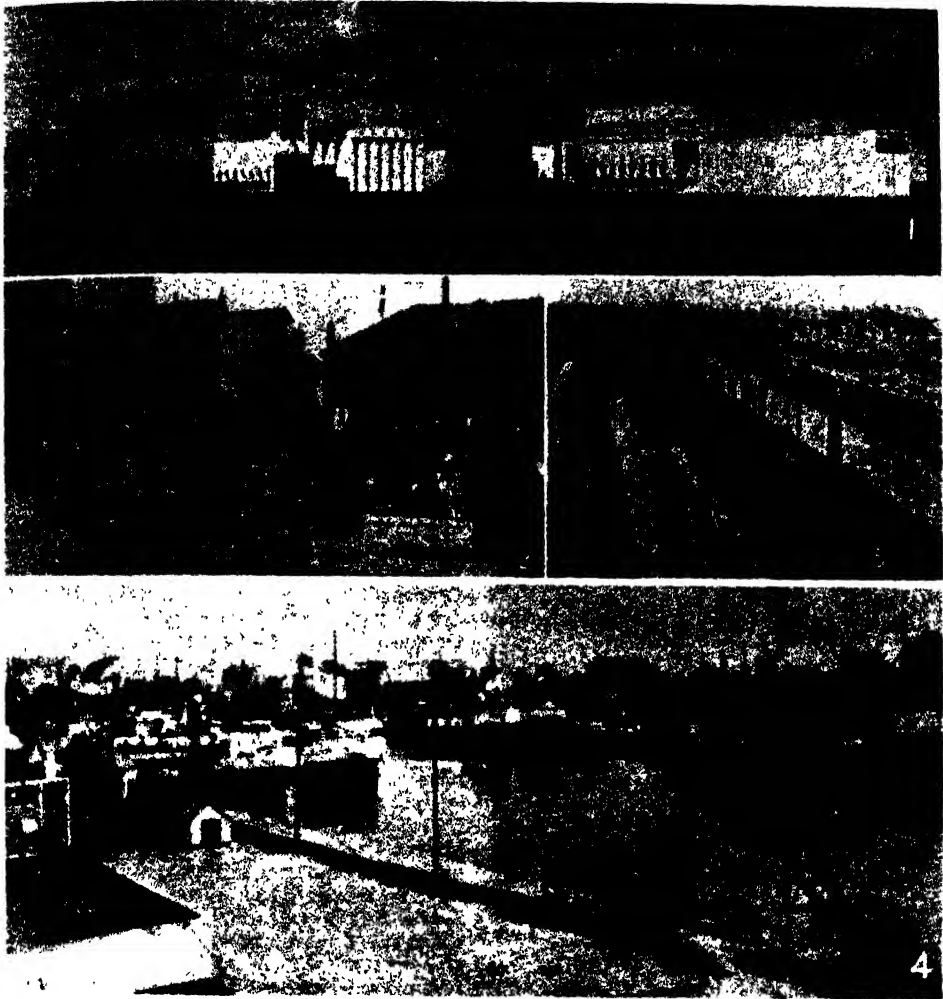
importance among Canada's exports is newsprint; followed by nickel, wood pulp, timber, meats, fish, automobiles, copper bars, and flour.

Wheat first attained premier export importance in 1906, but the growth of the pulp and paper industry and automobiles and tyres to leading export positions was more recent. The rising importance during the past two decades of the mining and metal-



lurgical industries producing non-ferrous metals is indicated by the increased importance since 1910 of exports of copper, nickel, zinc, lead, aluminium, and platinum. The importance of these mining industries in supporting export trade has increased since 1930 with the curtailment of world trade in agricultural products. Indeed, if exports of gold bullion (not generally included with merchandise) be added to those of the other non-ferrous metals it will be found that the mining and metallurgical industries provided exports almost equal to those of agriculture, and greater than those derived from the forest resources.

Trade in Raw and Manufactured Products. The proportion of raw and finished goods



TRADING SCENES

Proximity to the large American market, outlets to the Atlantic and Pacific Oceans and enormous resources in agricultural land, forests and minerals, make Canada naturally a great trading country. 1. Elevators at Port Arthur: Canada is the world's largest exporter of wheat. 2. Shopping in the French manner at Champlain market, Quebec. 3. Freight yards at Winnipeg. 4. Vessels in Port Dalhousie harbour waiting to pass through the Welland Ship Canal.

Photos. Canadian Official News Bureau; Canadian Pacific Railway; Canadian National Railways

imported and exported is often taken as a measure of the industrial development of a country. Early in Canada's history, imports consisted principally of manufactured goods, and exports of raw and semi-processed materials. Since the beginning of the present century, this situation has been changed. Exports of raw materials in 1935 represented only 36 per cent of the total, the lowest proportion in any year on record except 1920. Large exports of wheat help to swell

the proportion of raw products exported from Canada.

Raw materials accounted for 30 per cent of the total imports in 1935. Some of these raw materials (for example, fresh fruits) are ready for human consumption in their unprocessed state, but it has been estimated that more than half the imports into Canada are for the use of industry or for industrial processing. Such items include crude petroleum, automobile parts, raw cotton and

other crude textiles, coal, raw sugar, and rubber. Indeed a number of Canadian industries using imported raw materials are producing for export.

Canadian Tariff. The Canadian tariff is designed partly to provide revenue and partly to afford Canadian industry a measure of protection against foreign competition. The present tariff was originally enacted in 1907 although the schedule of rates of duty has been revised from time to time. It contains three scales of duty: (1) general, (2) intermediate, and (3) British preferential.



LOADING FLOUR AT MONTREAL HARBOUR

Photo: Fox

The intermediate tariff is lower than the general and forms the basis for the negotiation of trade treaties with non-British countries.

The British preferential tariff is still lower than the intermediate. In addition to these scales of duties, a surtax is provided to apply to countries discriminating against Canada, and there are also some special concessions below the intermediate tariff applying to most favoured foreign nations. The benefits of the British preference have been extended to practically all parts of the Empire and the intermediate tariff now applies to most important foreign countries. The United States was extended its benefits by the conclusion of a trade agreement on 15th November, 1935.

A novel feature of the Canadian tariff is an anti-dumping clause. Special or dumping duty is leviable on imports into Canada

which are sold on terms that are held to compete unfairly with Canadian producers.

Trade Agreements with the United Kingdom and the United States. Under the United Kingdom agreement of 1932, Canada obtained the assurance of continued free entry into the United Kingdom market for Canadian products which were free of duty in virtue of the Import Duties Act of 1932. Additional preferences were granted Canada on certain important products (such as eggs, butter, cheese, condensed milk, wheat, unwrought copper) by the imposition of new or increased duties on competing foreign imports. The 10 per cent preference to Canadian timber, fish (fresh and canned), asbestos, zinc, and lead, was guaranteed. The United Kingdom also undertook to assure unrestricted free entry of bacon and hams up to a maximum quantity of 2,500,000 hundredweight, and to maintain for ten years a preference of 2s. 4d. per pound on unmanufactured tobacco.

In return, Canada agreed to widen the margin of preference on imports from the United Kingdom on a wide variety of goods. Changes were made in 225 tariff items, on 223 of which the margin of preference was increased. On 133 items, the preferential rate was reduced, more than half being made free of duty. On the remainder, the margin between the preferential and the intermediate and general rates was increased by raising the latter. In general, Canada agreed that protection by tariffs shall be afforded against United Kingdom products only to those industries which are reasonably assured of sound opportunities for success, and that protective duties shall not exceed such a level as will give the United Kingdom producers full opportunity of reasonable competition. A new agreement was concluded in 1937.

A comprehensive trade agreement between Canada and the United States was signed on 15th November, 1935. The agreement opened to Canada wider markets for about sixty commodities. In agriculture, concessions of prime importance were obtained on cattle, cream, seed potatoes, clover and grass seeds, hay, turnips, and maple sugar. Reductions were obtained on fresh or frozen halibut and salmon, certain fresh lake fish, pickled or salted salmon, and smoked herring. On lumber and timber the duty and excise tax were cut by 50 per cent. In the mineral group substantial reductions were made in the duties on feldspar, talc, lime, and various iron alloys. Important concessions were also obtained for Canada on certain manufactured products: acetic acid, pulpboard in rolls for wallboard, whisky, patent leather, and harness and saddlery.



INNER HARBOUR, VICTORIA, BRITISH COLUMBIA

Victoria is the capital of the province and a natural outlet for trade with the Far East.

Photo Canadian Official News Bureau

leather. In addition to the reductions in duty, the United States guaranteed continued free entry on a score of Canadian products of which newsprint, wood pulp, pulpwood, shingles, and lobsters are the most important.

The basis of the tariff concessions by Canada was the granting to the United States of most-favoured-nation treatment. This entailed the extension to the United States of the intermediate tariff in its entirety, as well as those tariff advantages that have been or may be granted by Canada to other foreign countries. In addition, Canada granted specific concessions with respect to 180 items which may be summarized as follows—

Items on which the rate of duty is reduced	66
Items previously dutiable placed upon the free list	20
Items on which the intermediate tariff is bound against increase	79
Items on which continued free entry is guaranteed	15

The extension of the intermediate tariff to the United States constituted, with the special reductions, the most thoroughgoing revision of the Canadian tariff structure effected since its inception.

Tourist Trade. In recent years the tourist trade has become an important source of revenue in certain parts of the Dominion. It represents the economic disposition of national assets in which Canada is particularly rich, namely, its picturesque scenery, its invigorating climate, its opportunities

for hunting, fishing, and boating, as well as for winter sports. In a sense, tourist trade may be considered along with Canada's principal exports. In 1935 total expenditures in Canada of tourists from other countries was estimated at approximately \$202,000,000, of which \$132,000,000 represented expenditures by tourists entering Canada from the United States in motor-cars. The expenditures of foreign tourists in Canada must be viewed in relation to the expenditures of Canadian tourists in foreign countries; it is estimated that Canadian tourists spent abroad in 1935, \$79,000,000.

TREPASSEY. A seaport in Newfoundland, 18 miles west of Cape Race, and 81 miles from St. John's with which it is connected by railway. Its inhabitants are practically all engaged in or connected with the cod fishery. An English settlement here in the early seventeenth century replaced a still earlier French settlement. Population, 552 (1935).

TWEEDSMUIR, JOHN BUCHAN, 1ST LORD. See article, Vol. VIII.

TYRRELL, JOSEPH BURR (born 1858). Geologist and explorer, born at Weston, Ontario. He carried out important explorations for the Geological Survey of Canada, in the Rocky Mountains and throughout the vast region of northern Canada. He worked in the Yukon as a mining engineer, and later in the goldfields of northern Ontario. He was a gold medallist of the Royal Geographical Society, the Royal Geological Society, and the American Geographical Society. He edited David Thompson's

Narrative, Samuel Hearne's *Journey and History of Hudson Bay*.

UTRECHT, PEACE OF. A name given to a series of treaties between France, Great Britain, and other European nations, signed at Utrecht in 1713. It provided for the restoration to Great Britain of the Hudson Bay territory, Acadia, and Newfoundland; the retention by France of Cape Breton and Anticosti and certain fishing rights on the Newfoundland coast.

VANCOUVER. See article, Vol. VIII.

VANCOUVER ISLAND. See article, Vol. VIII.

VAN HORNE, SIR WILLIAM CORNELIUS (1843-1915). American born railway executive from Illinois. After some years of service with American railways, he became general manager of the Canadian Pacific Railway in 1882, president in 1888, and chairman of the board of directors in 1899. He had much to do with the building of Canada's first trans-continental railway, and even more with its organization. His firm hand guided it through its most difficult period.

VICTORIA, City of British Columbia. See article, Vol. VIII.

VICTORIA ISLAND. A large island in the Arctic Archipelago, north of Coronation Gulf. Its area is approximately 80,450 sq. miles. It was named after Queen Victoria. Rae and other explorers from the middle of the nineteenth century have made known its principal features.

WALKER, SIR BYRON EDMUND (1848-1924). Banker and humanitarian, born in Haldimand County. He joined the staff of the Canadian Bank of Commerce in 1868, and in 1907 became its president. He was one of the founders of the Champlain Society, and was chancellor of the University of Toronto in 1923.

WALKER, HORATIO (born 1857). See ART, Vol. IX, page 4725.

WAR OF 1812. See article, Vol. VIII.

WASHINGTON, TREATY OF. Between Great Britain and the United States in 1871. It dealt with the Alabama claims, San Juan boundary, North Atlantic fisheries, navigation of Lake Michigan and certain canals, a system of bonded transit, and exemption from duty of American logs floated down the St. John River. The treaty was terminated at the instance of the United States in 1885.

WATSON, HOMER RANSFORD (1855-1936). See ART, Vol. IX, page 4725.

WEBSTER-ASHBURTON TREATY. Negotiated by Lord Ashburton and Daniel Webster, in 1842, on behalf of Great Britain and United States. It provided for the settlement of the International Boundary between Maine and New Brunswick, as well

as from the St. Mary River to the Lake of the Woods. It also provided for the free navigation of the St. John River, the suppression of the slave trade, and the extradition of criminals.

WHITEWAY, SIR WILLIAM VALLANCE (1828-1908). Statesman. He was born in Devonshire, England, and came to Newfoundland in 1843. He studied and practised law, and was elected to the Assembly in 1858. From 1865 to 1869 he was Speaker of the Assembly. In 1869 he was a delegate from Newfoundland to Ottawa to consider the entry of Newfoundland into Confederation. From 1873 to 1878 he was Solicitor-General. He was Premier from 1878 to 1885 and from 1889 to 1897. He was appointed an Imperial Privy Councillor in 1897.

WHITNEY, SIR JAMES PLINY (1843-1914). Statesman, born at Williamsburg, Ontario. He practised law, and was elected to the Ontario Assembly in 1888. In 1896 he became Leader of the Conservative party in Ontario, and in 1905 Prime Minister of the province.

WILSON, SIR DANIEL (1816-1892). Scientist, born in Edinburgh. He went to Canada in 1853 as professor of history and English literature in the University of Toronto, and became President of the university in 1881. He was President of the Royal Society of Canada in 1885. He wrote *Prehistoric Man, The Missing Link, Chatterton, The Lost Atlantis*.

WINDSOR. A city of Ontario, on the Detroit River. It was laid out in 1834 incorporated as a town in 1858, and as a city in 1892. It is connected with Detroit, on the opposite side of the river, by both a tunnel and a bridge. It is an important manufacturing and commercial city, a centre for the manufacture of automobiles and drugs, and for steel products. It has a large salt plant and an important distillery. The city's proximity to the United States has brought it many branches of American industries. Hydro-electric power is available. Population, 63,108 (1931).

WINNIPEG, LAKE, in the south-central part of Manitoba, with an area of 9459 sq. miles. It is shallow, nowhere exceeding 70 ft. in depth. There are several large islands in the lake, including Reindeer Island and Big Island. The fisheries on Lake Winnipeg are important; whitefish constitutes nearly one half of the total catch, and tullibee, a variety of whitefish, nearly one third.

WINNIPEG RIVER. A river flowing from Lake of the Woods to Lake Winnipeg. Its principal tributary, English River, rises in the region west of Lake Nipigon and empties into the Winnipeg River after a course of

330 miles. The ultimate source of the Winnipeg River is the upper waters of Firesteel River, on the international boundary, not far from the western shore of Lake Superior. Winnipeg River is on the water route used by explorers and traders between Eastern Canada and what are now the Prairie Provinces. To-day its rapids are harnessed for the development of water power, most of which is transmitted to the city of Winnipeg.

WINNIPEGOSIS, LAKE. In the province of Manitoba immediately west of Lake Winnipeg, Winnipegosis has an area of 2086 sq. miles. The two lakes are connected by Dauphin River and Lake St. Martin. Winnipegosis was on an ancient Indian thoroughfare between the Assiniboine River and the Saskatchewan River. The explorer La Vérendrye built two posts, Forts Bourbon and Dauphin, at the northern and southern ends of the lake.

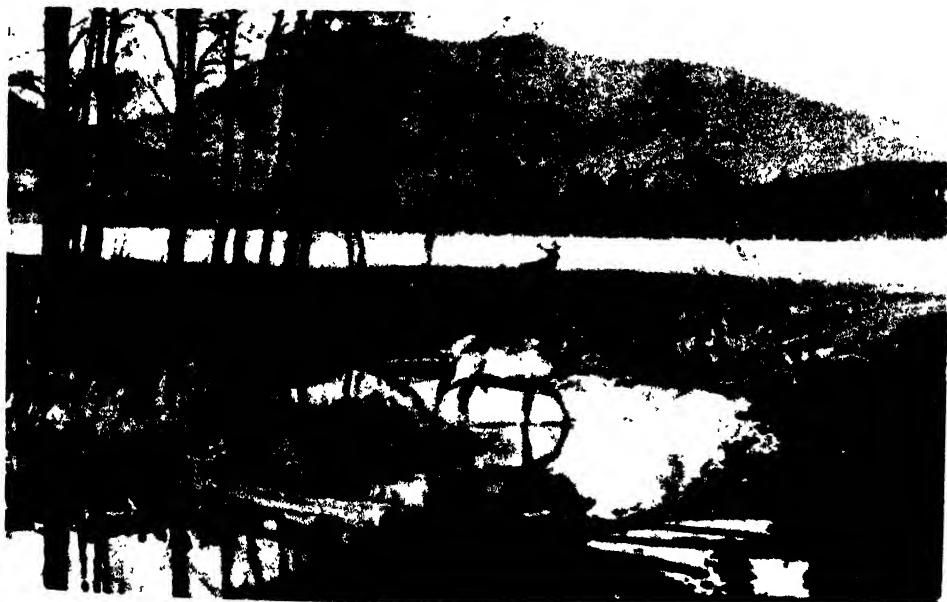
WOODS, LAKE OF THE. A lake on the international boundary between Canada and the United States, west of Lake Superior. Its area is 1851 sq. miles. It was probably discovered by Jacques de Noyon in 1688. For many decades it was on the water route between eastern and western Canada. In 1732, La Vérendrye built Fort St. Charles, on what was afterward known as the North West Angle of the Lake of the Woods, and

which became the subject of a long controversy when the boundary was being settled. As finally determined the boundary runs due south from the North West Angle until it strikes the 49th parallel, which happens to be in a bay of the Lake of the Woods, and thus cuts off a piece of Minnesota from the rest of the United States. The Lake of the Woods once supplied much sturgeon and caviare to the North American market.

WRONG, GEORGE MCKINNON (born 1860). Historian, born at Grosvenor, Ontario. He was professor of history in the University of Toronto, 1894-1927, succeeding Sir Daniel Wilson. He established the *Review of Historical Publications relating to Canada* (now the *Canadian Historical Review*) in 1897. He wrote *The British Nation*, *The Earl of Elgin, A Canadian Manor and its Seigneurs*, *The Fall of Canada*, *The Conquest of New France*, *The Rise and Fall of New France*, *Canada and the American Revolution*.

YARMOUTH. A city of Nova Scotia, founded in 1759 and incorporated as a town in 1890. The first settlers were Acadian French and refugees from New England. As the place lies at the foot of the peninsula of Nova Scotia, the old Indian name *Kees-pongwith*, meaning "land's end," is appropriate. Population, 7055 (1931).

YUKON. See article, Vol. VIII.



ELK IN JASPER NATIONAL PARK, ALBERTA

Jasper National Park was set apart in 1907. There are several other parks in Alberta, including reserves for both buffalo and elk.

Photo: Canadian Official News Bureau

IRISH FREE STATE SECTION

ACHILL ISLAND. See CONNAUGHT, Vol. II.

AGRICULTURE AND FARMING. Ireland lies approximately between $51\frac{1}{2}^{\circ}$ and $55\frac{1}{2}^{\circ}$ north latitude. Its total area is 32,596 sq. miles, of which the Irish Free State covers 27,137 sq. miles. The country in broad outline is basin shaped, consisting of a great irregular depression, surrounded by a ridge of mountains varying considerably in structure and elevation. The central basin is composed almost entirely of limestone, a fact of great importance from the point of view of soil fertility. Climatic conditions, however, are no less important than soil characteristics in determining agricultural productivity. The average temperature is about 50° F., the average summer temperature being approximately 60° F., and the average winter temperature 40° F. No other country in the same latitude has such a high average temperature. The relative humidity is high. The rainfall averages about 40 in., varying from about 30 in. in the eastern districts to 70 in. or more in some western localities. The fertile soil, with the abundant rainfall and long growing season, makes the country peculiarly adapted to the growth of rich pastures and to heavy yield of crops, particularly of forage crops.

The total land area in the Irish Free State is approximately 17,000,000 acres, distributed as follows in 1935—

	Acres
Under crops	1,591,445
First year hay	253,628
Other hay	1,829,575
Pasture	7,924,655
Woods and plantations	241,555

the balance consisting of bogs, waste mountain lands, etc.

The number of agricultural holdings in 1935 was 376,369, of which about 40 per cent were more than 30 acres, and slightly over 20 per cent were more than 50 acres.

As a result of successive Land Acts, the farmers are now the proprietors of the farms which they occupy, subject to terminable annuities payable to the Land Commission.

As the utilization of land, set out above, would suggest, the major interest in agriculture in the Irish Free State is the production of live stock and live stock products. The equable climate, with the high rainfall and

good pasture conditions, render the country peculiarly adapted to this form of agriculture.

In 1935 the number of milch cows was about 1,330,000 and the total number of cattle approximately 4,000,000. The export of live cattle has been somewhat affected by the introduction of quotas in Great Britain, but it still remains a very important business. The number of live cattle exported in the year 1935 was 668,176. The cow population of the Irish Free State consists almost exclusively of milking Shorthorns of the dual purpose type. The native Kerry breed is mainly confined to the extreme south-western districts of Cork and Kerry. Much assistance has been given during the last forty years, first by the Royal Dublin Society and subsequently by the Department of Agriculture, towards improving the quality of the live stock, on the one hand by the award of premiums to farmers for the purchase of high class pedigree bulls, and, secondly, by the administration of the Live Stock Breeding Act, 1925, under which it is illegal to have possession of a bull except under licence. The bulls licensed are of the Shorthorn type, and of Kerry type in the Kerry cattle area, as well as pedigree bulls of the Aberdeen Angus and Hereford breeds, which are used for crossing to produce beef cattle. In addition, a limited number of Galloway bulls are used in the mountain districts of the west.

The horse-breeding industry is of considerable importance in the Irish Free State, and Irish horses have acquired a well-merited reputation in the hunting field and as steeplechasers. The total number of horses amounts to approximately 400,000. The farm horses are medium sized and hardy, well fitted for the varied work of the small farms. There are very few heavy cart horses of the Shire or Clydesdale type. Thoroughbred sires are very widely used to produce the hunters for which the country is famous. There is a considerable number of stud farms in the country, where many of the famous winners of the great classic races have been bred. The great event of the year in connection with the horse breeding industry is the famous Royal Dublin Society Horse Show, held at Ballsbridge.

The sheep population amounts to approximately 3,000,000. The industry is mainly



AGRICULTURE AND FARMING

1. Haymaking in Co. Wicklow: there are over 2,000,000 acres under hay, and crops are usually heavy. 2. Corner of a farmyard: the 15,500,000 poultry are in flocks on general farms. 3. Digging potatoes on Albert Agricultural College farm: production in Ireland in 1935 was over 2,500,000 tons. 4. Dairy farm: there were nearly 1,400,000 milch cows in 1936. 5. Reaping wheat: the acreage under wheat increased from 21,388 acres in 1932 to 254,321 acres in 1936. 6. Ploughing the land: the farm horses are medium sized and hardy, well fitted for the varied work on small farms. 7. Country cattle fair in Co. Cavan.

Photos: Irish Independent; Irish Times; Irish Tourist Association; March of Time

associated with certain western counties, but is also carried on in the midlands, east and south-east and in certain mountain districts. In the lowland districts the sheep are long-woolled, a considerable proportion of the ewes being crossed mainly with Suffolk and Oxford Down rams for the production of early maturing lambs.

The breeding and rearing of pigs is an important element in the agriculture of the Irish Free State. The total number of pigs

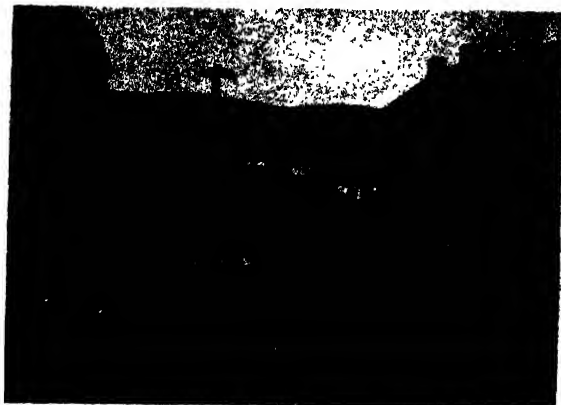
The export trade is strictly controlled as regards quality of the product by the Department of Agriculture.

The dairying industry is of special interest in the Irish Free State. On it depends directly the production of beef cattle, and the separated milk, which is a by-product of the industry, is of the greatest value in the raising of pigs and poultry. Reference has already been made to some of the methods for improving the milking herds. In addition,

the Department of Agriculture encourages the recording of milch cows through the cow-testing associations throughout the country. The rich pastures, long growing season and mild climate render the country exceptionally well suited to the production of milk. While dairy cattle are associated with most farms, the industry is concentrated in the south-western counties, the dairy lands of Limerick, Tipperary and Cork being especially productive. The main product is butter, but considerable and increasing quantities of cheese, mainly Cheddar, as well as condensed milk and milk powder, are produced. The output of these commodities is centred in 187 central creameries and 384 separating stations. In the separating stations the milk received from the farmers is separated, the cream being pasteurized

and taken to the central creamery for manufacture into butter. The creameries are well equipped according to the most modern practice. They vary considerably in size. The largest, with its group of separating stations, handles about 40,000 gallons of milk per day during the peak period of summer production. The quantity of creamery butter produced in 1935 was 827,745 cwt., of which 473,152 cwt. were exported. The creameries are mainly co-operative and affiliated to the central advisory body, the Irish Agricultural Organization Society Ltd., founded by the late Sir Horace Plunkett in 1894.

The area under cultivation is relatively small and has diminished to its present level from about 3,500,000 acres in 1851. Recently measures have been enacted by the Government to encourage an increase in the area of cultivated land. In the case of wheat, the development has been very notable, the area under that crop having increased from 21,388 acres in 1932 to 254,521 acres in 1936. Four large beet-sugar factories have been established, handling the produce of 61,491 acres of sugar beet. The production of sugar now approximates to the total



DELIVERING MILK AT A CREAMERY

In 1935, 827,745 cwt. of creamery butter were produced, of which 473,152 cwt. were exported.

Photo: Irish Tourist Association

is approximately 1,000,000. The pigs are almost exclusively of the Large White breed, and as a result of a licensing scheme for boars, and the provision of premiums to small farmers for the purchase of boars, the Department of Agriculture has succeeded in effecting a remarkable uniformity in the type of pig throughout the country. The pigs are mainly raised by small farmers, and are fed on barley, maize, oats, separated milk and potatoes. The use of separated milk, home-grown cereals and potatoes is of importance in producing the excellent flavour of Irish bacon. In addition to the production of bacon, there is an important trade with Great Britain in fresh pork, for which the Large White pig is especially suitable.

There are very few specialist poultry farmers in the Irish Free State, but a flock of poultry is almost invariably attached to the farms. The total number of turkeys is approximately 1,000,000, with an equal number of geese. The number of ducks is about 1,600,000 and hens and chickens amount to about 15,500,000. The export of eggs amounts to about 3,500,000 great hundreds, and there is a very considerable trade with Great Britain in both live and dead poultry.



FERTILE VALE IN DONEGAL

Photo: Irish Independent

requirements of the country. The main cereal is oats, the area in 1936 being 558,889 acres. Barley is widely grown in midland and south-eastern counties, being sold mainly for malting purposes. Potatoes are a very important crop, soil and climatic conditions being particularly suitable, so that with careful management exceptionally heavy crops can be produced. A substantial trade in seed potatoes both for the home and export markets has recently been developed. The industry is centred in a few specially suitable districts, and is encouraged and controlled by the Department of Agriculture.

A very complete system of agricultural education has been developed in the Irish Free State. In University College, Dublin, there is a Faculty of Agriculture, with a demonstration and experimental farm at the Albert College, Glasnevin. In University College, Cork, there is a Faculty of Dairy Science, with an experimental creamery, and with a demonstration and experimental farm near the city. The Veterinary College in Dublin is under the control of the Department of Agriculture. In addition to these institutions, for higher study and research, the Department maintains three residential

colleges in the country, and also supports by grants a number of colleges which provide agricultural courses. The department maintains also the Munster Institute, Cork, where women are trained in poultry-keeping, etc. It may be mentioned that the advisory work among farmers in poultry keeping is almost entirely carried out by women trained in the Munster Institute. Instruction by way of winter classes, demonstrations on farms, etc., is carried out all over the country by a staff of experts maintained by the Department and the County Committees of Agriculture. Recently, attention has been given to the problem of land reclamation. A beginning has already been made, and it is possible that land reclamation combined with the commercial exploitation of the peat bogs may become of very considerable importance in the future.

ARAN ISLANDS. See CONNAUGHT, Vol. II.

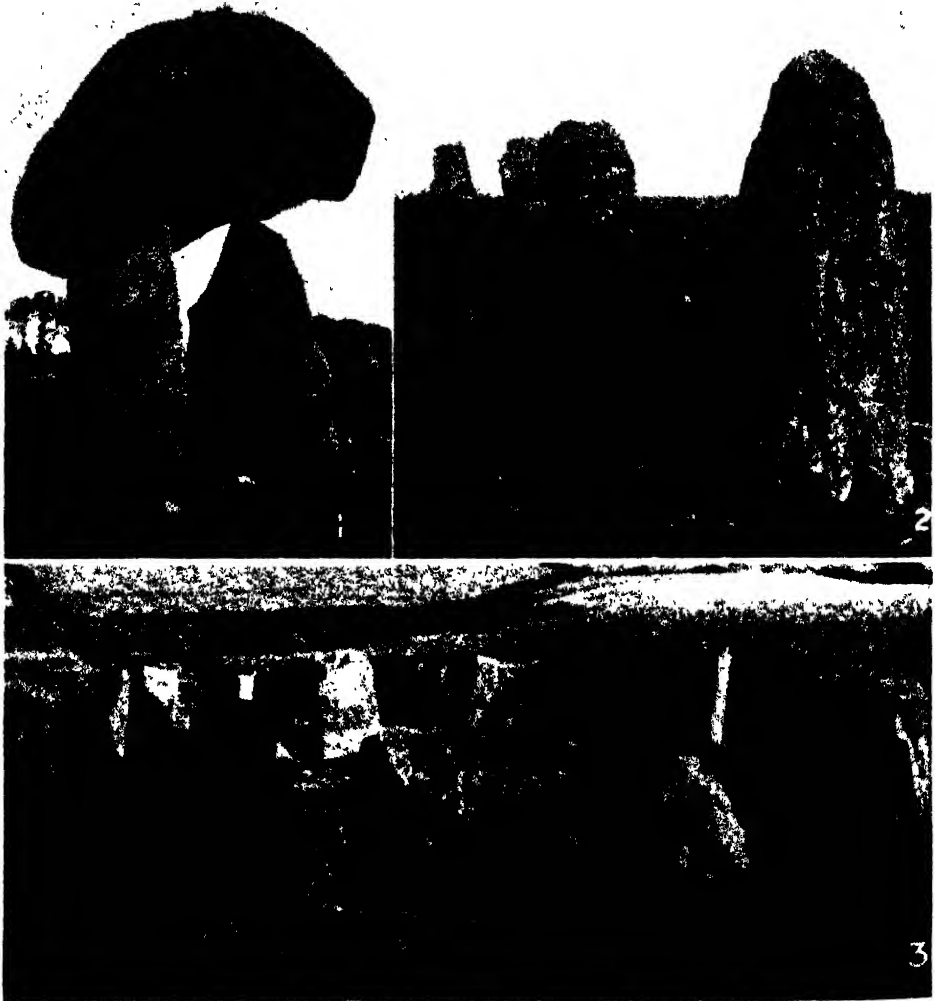
ARCHAEOLOGY. Although the scope of the present contribution is, strictly speaking, limited to the archaeology of the Irish Free State territory, it would be fallacious to visualize the problem from such a narrow angle.

To start with, it is obvious that the existing boundary between the Free State and Northern Ireland separates areas which are really a unit, the same classes of monuments and "finds" occurring on both sides of the border. The island being a comparatively small unit its old civilizations were fairly homogeneous. Secondly, Irish archaeology is the indispensable corollary to any study and solution of archaeological problems concerning Great Britain, whilst, *vice versa*, no

problem in Irish archaeology can be solved without consideration of the relevant questions on British soil. Thirdly, the archaeology of Ireland holds the clue for the explanation of many phenomena in the dim past of large tracts of western and northern Europe.

This great importance of Irish archaeology is largely due to the key position the country occupied at least twice in historic and prehistoric periods.

After the Great Ice Age, when Europe



MEGALITHIC MONUMENTS

Toward the end of the third millennium B.C. the cultural or racial movement (or both) of the megalith builders reached Ireland. There grew up a higher civilization whose memory was perpetuated by vast monuments.

1. Dolmen, a sepulchral monument, at Proleek, Co. Louth. 2. Pillar stones surrounding the mound at Newgrange, Co. Meath, a centre of prehistoric culture. 3. Stone circle, near Glandore, Co. Cork. the stones used for the circles in Ireland are usually small.

Photos: Irish Tourist Association; T. H. Mason



PREHISTORIC REMAINS

1. Sepulchral cairn, Knocknarea Summit, Co. Sligo. Traditionally it marks the burial place of Queen Maeve of Connaught. 2. Massive fort of Dun Aengus on Inishmore, Aran Islands. It is 2000 years old and stands at the edge of a sea cliff. The surrounding *chevaux de frise* of upstanding rocks hindered approach by attackers. 3. Ogham Stone, Ardmore, Co. Waterford. Erected between the first and fifth centuries A.D., these stones bear inscriptions in an unknown language, called Ogham.

Photos: T. H. Mason

became inhabitable for a numerous population, the old races of "palaeolithic" (Old Stone Age) man were gradually ousted, although they must survive, at least partially, in the present population. The existence of Ice Age man in Ireland is not yet well established, hence it appears that the newcomers of the New Stone Age, from about 5000 B.C. onwards, settled in a largely virgin country. The New Stone Age of Ireland is, however, by no means the comparatively highly developed civilization which we encounter in the "corridor" formed by the rivers Danube and Rhine. In this "belt" across Europe flourished a numerous agricultural population which, since about 4000 B.C., possessed, in addition to domestic animals, certain arts and crafts (e.g. pottery, textile technique) which allow us to see in them a "provincial" continuation of the early metal-using cultures of the Near East.

But to the east and west of this "corridor" life went on almost on palaeolithic lines, food-gathering, fishing, etc., forming the basis of existence of a semi-sedentary population. We meet their relics on Irish soil principally along the River Bann and in other flint-bearing districts of Northern Ireland, flint

being the most important rough material for making arms and tools.

Whence this population came to Ireland we cannot definitely say, although it is safe to assume that there is an old common stratum covering all western Europe, which occupied one country after the other, drifting in turn under the influence of the more progressive parts just indicated.

Whilst this old element is ultimately linked up with the western Mediterranean, there is also another element showing northern European affinities. This seems to have reached Ireland from a centre somewhere around Denmark, migrating along the shores of the Atlantic which underwent considerable changes even in comparatively recent geological periods. If this theory holds good these shore-dwellers were the first Nordic people in Ireland. To them we must attribute many of the "kitchen-middens" of the northern coasts of Ireland (e.g. Strangford Lough), relics of a fishing population, whilst other sites along the Bann, the Shannon and other rivers are obviously due to seasonal fishing for salmon and other fish.

There were, altogether, few stimuli of progress amongst these early settlers, although



ENTRANCE TO TUMULUS AT NEWGRANGE, CO. MEATH

One of the most impressive monuments of its kind in Europe, this tumulus has an entrance passage about 20 yd long, which gives access to a large dome-shaped chamber, with other apartments leading off it. It is over 2000 years old.

Photo: Irish Tourist Association

they must have been quite capable sailors, possessing not only the hide-covered wicker-work boat which survived up to the present in the canvas-covered "curraghs" of western Ireland and connected types, but also plank-built boats of superior workmanship.

But they were no match for a race of mariners who appeared towards the end of the third millenium, B.C., and who put an end to cultural stagnation. These early mariners were the founders of a civilization of much higher standard, characterized by strong social organization, a spirit of enterprise and conquest before unknown, strong religious conceptions and an obviously superior economic system. The most conspicuous monuments they left wherever they went are their burial places which were built of large, and frequently enormous, stones. Hence these monuments are called, by a Greek technical term, "megalithic monuments," or monuments built of large stones. Newgrange is their most splendid Irish representative, whilst world-famous Stonehenge in Wiltshire in a sense also belongs to this class.

The anonymous people who raised these monuments are termed the megalith-builders. Whence the movement originally started is rather difficult to say, but northern Africa and the Iberian Peninsula (Spain and Portugal) played undoubtedly a prominent part in its formation.

In any case, starting from Spain and Portugal the movement (racial, i.e. invasion, or purely cultural, or both) overran large tracts of France, western and northern Britain and Ireland, crossed the North Sea and took in also the Teutonic north. Of Great Britain, only the western parts were encompassed by this movement.

Wherever the megalithic people came they implanted the seed of higher civilization and as, when they expanded, they were just entering the Metal Age, they blazed the trail for the universal use of copper, gold and bronze (the first metals used by mankind) all over Atlantic Europe. They were, in short, the first truly civilized people of western Europe, and their galleys heralded a new age for all the countries they visited as prospectors, colonists, conquerors or innovators.

It will now be apparent why it has been said that Ireland held a key position in prehistoric Europe. The coastal traffic which in a way united the widely separated megalithic provinces of Europe must have focused in Ireland, the only megalithic area of considerable size between south-western Europe and the north. In addition, Ireland was rich in gold and copper, and hence her early Bronze Age civilization soon after 2000 B.C. reached a standard superior to any other Atlantic country. Objects of undisputed Irish workmanship have been found in Britain, France, Sweden, Denmark and northern Germany, the Early Bronze Age of all these countries being under very strong Irish influence.

This "Golden Age" of Ireland lasted for several centuries, and after a certain decline during the Middle Bronze Age new influences from continental Europe resulted in the fine perfection of the Late Bronze Age (from about 900 B.C. onwards).

In this period the Gaelic people must have taken possession of the country, blending with its earlier inhabitants, and their language survives to the present day as one of the few remaining branches of the once widely spread group of Celtic tongues.

Whilst the Continent, from about 1000 B.C. onwards, entered into the Early Iron Age, Ireland held tenaciously to her Late Bronze Age civilization, her isolation increasing as the centuries passed.

Nor was this isolation really broken during the period of the great Celtic conquest of the fourth century B.C. The Celts of eastern France and western Germany developed, out of the Early Iron Age, a very advanced iron culture which enabled them to conquer almost the whole of the then known Europe. They almost crushed the young power of

Rome and founded colonial kingdoms even in Asia Minor. Their culture is called after La Tène (a famous site in Switzerland).

Very little of these events of primary importance is mirrored in Irish archaeology of the late first millenium B.C. The invading La Tène Celts conquered practically the whole of Britain, establishing there the British language of which Welsh and Breton (in Brittany) are descendants; but only a

very tiny stream of this torrent crossed the Irish Sea, which gave at least north-eastern Ulster something like a La Tène civilization. It started about 200 B.C. and gradually waned into the dark period which the opening centuries of the Christian Era represent on Irish soil.

In the absence of any other evidence we are compelled to assume that outside Ulster and a few adjoining regions the old megalithic and Bronze Age people continued to live in their old traditions, little affected

from without and little affecting the outside world. Not even the Roman conquest of nearly the whole of Britain altered this state of affairs and thus it came that of all western Europe only Ireland (apart from northern Scotland) retained unbroken pre-Roman traditions in language, social order, culture and other matters spiritual.

This is a fact of outstanding importance, as Ireland thus became the sole heir of prehistoric Europe in face of a world which had been unified almost to the extinction of national individualisms.

It is a strange fact that we know very little about Irish archaeology during all these centuries. We know that during the La Tène period originated the "Pentarchy" of the five Irish kingdoms which were loosely held together by the High Kingship of Tara; we have an overwhelming oral and literary



IRISH CROSSES

Left: Muiredach's Cross at Monasterboice, Co. Louth. Erected in the tenth century. *Right:* Cross, roughly cut in prehistoric pillar stone, Kildare, Co. Kildare. In this way the people christianized pagan monuments.

Photos: Irish Tourist Association; T. H. Mason

heritage of epic character which is the envy of other European nations and which has its roots in this period; we know that the western seaboard of the Roman province Britannia suffered increasingly from piratic raids by Irishmen in their hide-covered "curraghs," which proves that the country must have been teeming with humanity, and yet, the archaeological relics of this period strangely elude us. As far as we can ascertain they are few in number and hardly conspicuous. Somehow, however, the La Tène style must have survived, extending gradually over larger parts of Ireland, as it forms the basis of what is best in the subsequent early Christian art of Ireland.

All we can say is that, when the Roman provincial administration broke down finally in Britain and the country became the prey of the Saxons and other Teutonic tribes, Ireland emerges out of the dark again as a vigorous country, with her well-defined national character, clearly possessing a civilization of her own in which the Bronze Age and La Tène elements had amalgamated, and entering a new phase of her life by the fact that she was embracing the Christian faith with all her unspent force.

The Christian faith she took from the dying West of the Roman Empire and carried the torch into her national future of which St. Patrick, the Apostle of Ireland, had laid the foundations.

Thus whilst the Roman world crumbled to ruins it was, of all Western nations, free Ireland which became the standard-bearer of the religious heritage of the Western Empire.

How the great Irish Mission, soon afterwards, brought Christianity to other countries is part of world history, not of archaeology proper, but attention must be drawn to the overwhelming wealth the National Museum of Ireland and the Irish countryside can show in precious relics of this period, be they reliquaries (bell shrines, book shrines, croziers), other ecclesiastical and secular objects (brooches, etc.), or monuments like "high crosses," oratories, monasteries or round towers of the seventh and eighth centuries, and the period immediately following.

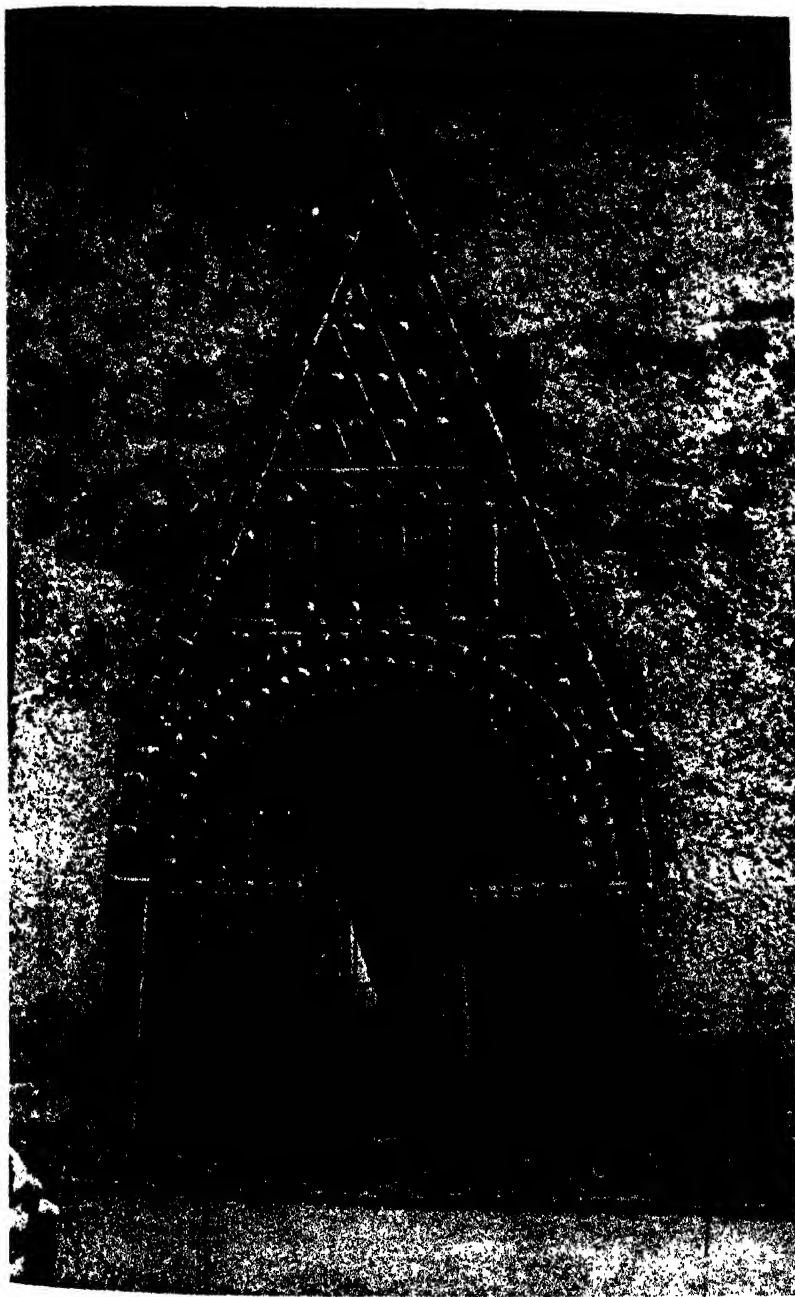
It is this unparalleled wealth of monuments which alone repays a visit to Ireland and in which she excels all other European countries. Ireland can be called an open-air museum of all periods of European archaeology.

The Viking assault (A.D. 800 to A.D. 1014) put an end to this second "golden age" of Ireland. The Irish eventually freed themselves and reduced the Vikings to a few coastal strongholds (like Dublin, Water-

ford, Limerick). There was even a certain revival of the old-established monastic art, and, certainly, the intercourse with the Vikings had produced artistic results of no mean order in Scandinavia as well as in Ireland (the best high crosses belonging to this period); but somehow the old vigour did not reassert itself sufficiently and the country was finally submerged in political anarchy and cultural dissolution which ended in the Anglo-Norman invasion.

ARCHITECTURE AND ART. Ireland contains an immense number of ancient remains, if prehistoric or primitive examples be included, but these—although very interesting archaeologically—can hardly be classed as architecture. The earliest examples are the early Christian monastic settlements, cells, and boat-shaped oratories, chiefly found along the southern and western seaboard and on the islands off the coast. Many primitive churches exist in the Dingle promontory of Kerry, and on the Aran Islands. On the largest island of Aran is also the amazing prehistoric fort of Dun Aengus. The beehive cells are constructed on the same principle as the Mycenaean tombs and the so-called Treasury of Atreus, not vaulted as a true arch, but on the corbel principle. The earliest mention of one of these monastic settlements is that of Skellig-Michael, A.D. 812, on a lonely island rock in the Atlantic off the Kerry coast. These early structures, and the more developed edifices which followed, show many signs of Greek influence. Rectangular oratories, with vertical walls and gabled high-pitched roofs, inclined jambs to the doorways, *antae* or projecting side walls, etc., these churches were, at first, single-celled structures, but afterwards chancels were added.

The next phase was the development of what is commonly termed the Hiberno-Romanesque, that is, churches having definite features of architectural design and ornament, and in this style a considerable degree of artistic skill and excellence was reached, but none of the buildings was on the scale of the larger churches of England or France; nevertheless the architecture of this period in Ireland is full of interest; it resembles coeval Saxon architecture to a certain extent, but attained to much higher excellence than any of the examples still remaining in Britain. The finest and best preserved examples of the Irish Romanesque is Cormac's Chapel on the Rock of Cashel, Co. Tipperary, part of a group of interesting remains. The native rendering of the Romanesque prevailed in Ireland until the Anglo-Norman invasion in 1170 and even after, until followed by Transitional, then by Gothic, the native rendering being adhered



DOORWAY OF CLONFERT CATHEDRAL, CO. GALWAY

One of the finest examples of Irish Romanesque.

Photo: T. H. Taylor

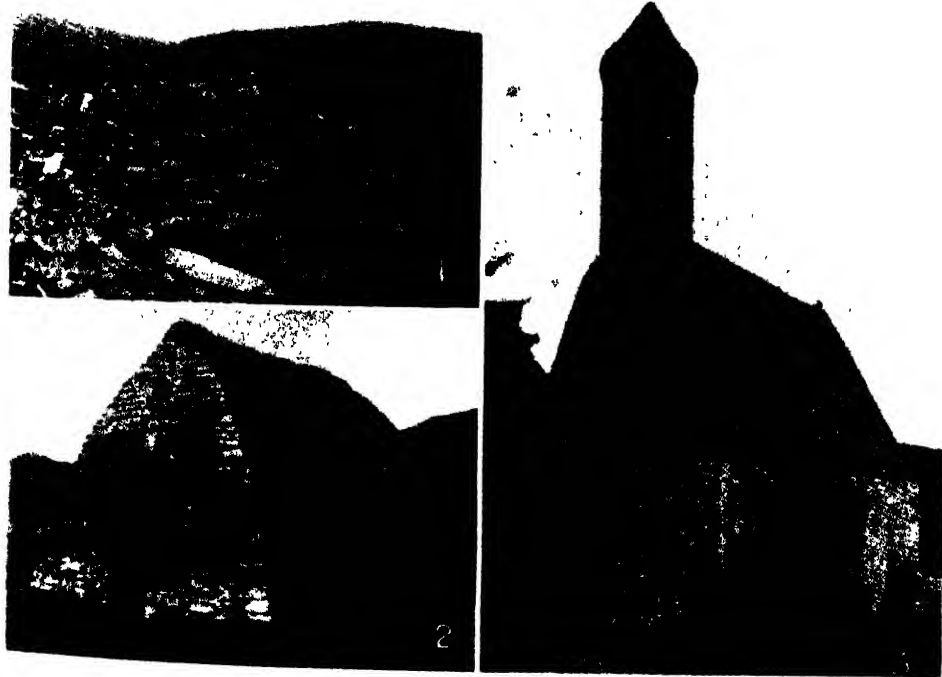
to outside the sphere of the Norman influence. The Anglo-Norman nobles built churches and defensive castles, but they were based strictly on Anglo-Norman precedent and detail. In Christ Church Cathedral, Dublin, formerly the Priory of the Holy and Undivided Trinity, and originally a Danish foundation (1038), the Anglo-Norman invaders co-operated with the Irish Archbishop of Dublin, St. Laurence O'Toole, in rebuilding the Danish church; the south transept remains and is a purely Norman piece of architecture, very good of its type. The nave was rebuilt in the thirteenth century in the Early English style, of which it is a beautiful example. Christ Church Cathedral, unlike many other medieval churches in Ireland, has been continuously in use. It was restored and largely rebuilt by George Edmund Street, R.A., some sixty years ago.

In early and medieval times, Ireland was notable for its superior artistic craftsmanship in illuminated MSS., metal-work, stone carving, etc. In the National Museum,

Dublin, is perhaps the finest collection of early gold ornaments existing to-day, also such splendid examples of metal work as the famous eighth-century Ardagh Chalice, and numerous other objects; later still, the twelfth-century Cross of Cong, etc., which all show the high degree of artistic skill attained by the Irish craftsmen in metal and enamel working. In the art of illuminating from the seventh to the eleventh century, the Irish were unrivalled for the beauty and intricacy of ornament and colouring; the Book of Kells (eighth century), preserved in Trinity College, is the most famous. The Irish illuminator's art undoubtedly had an influence on architectural ornament, not only in Ireland, but on the Continent.

The art of the sculptor is exemplified in the wonderful series of Celtic crosses, from the simple forms to the most elaborately-carved High Crosses, dating from the seventh to the eleventh century.

A remarkable feature of architecture in Ireland is the unique series of round towers.



EARLY CHRISTIAN ORATORIES

1. Clochan, or Beehive Cell, Fahan, Co. Kerry. Clochans are the earliest dwellings of stone, and were probably monastic cells. They are constructed on the same principle as the Mycenaean tombs. They were first built about the third century A.D. 2. Galerus Oratory, Dingle, Co. Kerry. This was erected in about the fifth century, and shows a development in architectural skill. It is 22 x 18 x 16 ft., and the doorway is 5 ft. high. No mortar was used in its construction. 3. St. Kevin's Church (Kitchen), Glendalough, Co. Wicklow. It shows a further advance, with its gabled, high-pitched roof of slabbled stone. It was built in about the sixth century.

Photos T. H. Mason



MEDIEVAL BUILDINGS

1. "Nenagh Round." It is the circular keep of Nenagh Castle built by King John. Later it became stronghold of the Butlers. 2. The magnificent Irish Romanesque (tenth century) doorways of the Nun's Church at Clonmacnoise, Co. Leix. 3. The ruin of Muckross Abbey. Built in the fourteenth century, it overlooks the Middle Lake at Killarney.

Photos: Irish Times; T. H. Mason; Topical

They are gracefully tapered with an *entasis* and conical top, and were used as watch towers, bell towers, and treasuries in connection with churches. By the end of the twelfth century the most interesting period of early Irish architecture had closed.

The Gothic style was introduced in the thirteenth century, and had at first fewer distinctive features than the Irish Romanesque: there are numerous remains of pointed architecture all over the country: the development of the style proceeded slowly, the Irish apparently parting with the Romanesque reluctantly: as the pointed style progressed, more distinctive characteristics became noticeable, culminating in what is known as the late Irish Gothic, a native rendering of later Gothic.

In the later Middle Ages, Ireland had once again much direct intercourse with the Continent, and the architecture appears to have been much influenced by southern European example. Of all the late Irish Gothic churches, the Cistercian Abbey of Holy Cross, Co. Tipperary, is the largest and best preserved. These churches are simple and bold in character: two types of tower are found, the tall and tapering type, and the low massive type, both set over the crossing and finished with a distinctively Irish type of battlements. A remarkable feature is the window tracery, recalling French flamboyant rather than anything English. The cloisters of the Irish monasteries resemble southern French or Italian work more than

anything English or Norman. The elliptical ogival heads to the window tracery and the absence of cusping are striking features, also the exaggerated ogival brackets. There are many examples of the Gothic monastic



THE ARDAUGH CHALICE

The finest communion chalice of early Christian times, it is constructed of silver, bronze, gold, enamels and crystals, and was found near Ardaugh, Co. Limerick.

Photo: National Museum, Dublin

churches, chiefly Cistercian, Augustinian, Dominican, and Franciscan Orders.

The secular medieval architecture of Ireland consists chiefly of Anglo-Norman or Irish fortified castles, remains of which are numerous throughout the country. Dublin Castle dates from the reign of King John,

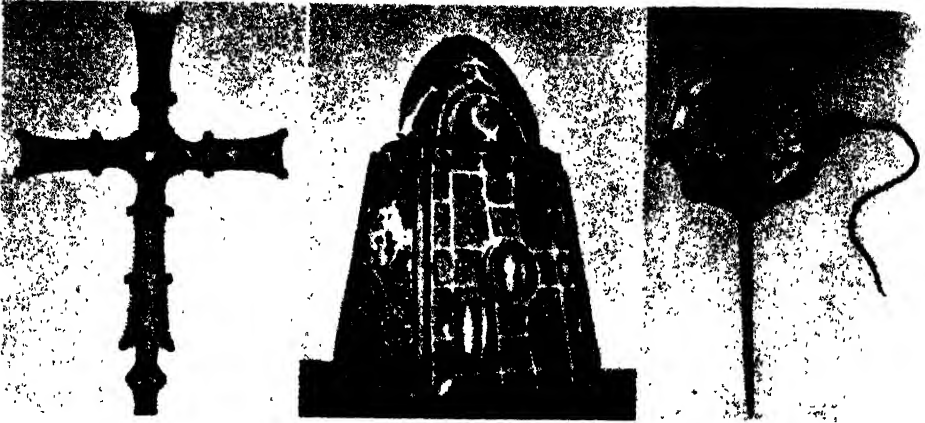


Play Scene from "Hamlet"

DANIEL MACLISE
(Tate Gallery)



The last in
WILLIAM MULREADY
(Tate Gallery)



EARLY IRISH JEWELLERY

Left: The Cross of Cong. A processional cross, made in A.D. 1123, for Turloch O'Connor, King of Connaught and Ireland. It enshrines a particle of the true cross. *Centre:* The Shrine of St. Patrick's Bell, made between 1091 and 1105. *Right:* The Tara Brooch. It was made about A.D. 750, of bronze gilt, with gold filigree, enamel and amber ornamentation.

Photo: National Museum, Dublin

but only fragments of the original structure remain. Buildings of the Tudor, Elizabethan,

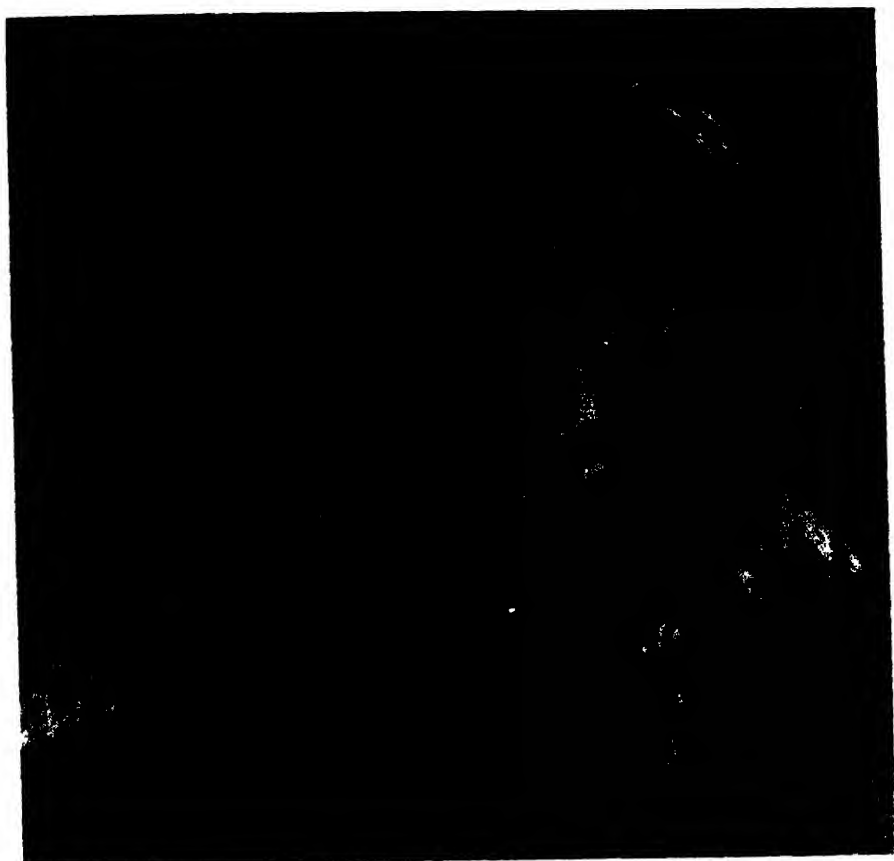


La Mort du Cygne
SIR JOHN LAVERY
(Tate Gallery)

provincial towns, notably Galway, where a marked Spanish influence is apparent. A few isolated examples of Tudor castles are to be found: Donegal Castle, Carrick-on-Suir, Ballyvourney, Thurles, etc. The times were unfavourable to the development of the Arts, and it was not until the rather late introduction of the Renaissance in the seventeenth century that they revived. The earliest example of any importance of this period remaining is the Royal Hospital, Kilmainham (1680), designed by Sir William Robinson, Surveyor-General to the Government of Ireland. Brick houses of Dutch type were also built in Dublin. The eighteenth century, especially the last quarter, was the golden era of architecture in Ireland. Dublin was adorned with a great number of splendid public buildings: the Custom House (begun 1781) by James Gandon, the great architect of the time, is one of the finest buildings of its type in Europe—indeed, Dublin has been described as the finest Georgian City in Europe. During this time, the nobility and gentry built themselves many magnificent mansions.

It was an age of culture and refinement, and the Irish aristocracy were liberal and discriminating patrons of the arts. Dublin became renowned for its progressive public spirit. Town planning was skilfully put into practice in the eighteenth and early nineteenth centuries. Fine furniture, silverware, modelled plaster work, carved and inlaid marble work, coachbuilding, cut glass, tapestry making, etc., all flourished. In the early half of the nineteenth century, the

and Jacobean periods are comparatively few in Ireland, but examples exist in many of the



DAME MADGE KENDAL

By Sir William Orpen, R.A.

Sir William was born in Dublin and educated at the Metropolitan School of Art there, and at the Slade School, London. His early work was mainly of interiors. During the World War he was an official artist, doing much brilliant work. The painting reproduced is one of the best examples of his later work as a portraitist, which has increased his reputation.

(C 2236)⁹

Courtesy · National Gallery, Melbourn

4850

neo-Greek influence became prominent, and the influence of the great Renaissance period still prevailed and lingered until the middle of the century, when the Gothic revival swept all before it, destroying the splendid old classical tradition and substituting no living art in its place. From 1800 on, a gradual decline in taste is apparent, with a rapid acceleration after 1850. Countless Gothic churches were built and, with a few exceptions, of little merit. The modern architecture of Ireland since about 1850 presents few features of interest, but there are not wanting some more hopeful portents



Back from the races
J. B. YEATS
(Tate Gallery)

for the future. The lost art of stained glass was revived in Dublin under the *aegis* of the late Christopher Whall, greatest of modern stained-glass artists, and practised in Dublin by Miss Sarah Purser, R.H.A., and the late Harry Clarke with much success.

The painters' art was not so prominent, but in the eighteenth and early nineteenth centuries there were many Irish painters of talent; with few exceptions, however, they were attracted to England: amongst these may be mentioned George Barrett, R.A., Nathaniel Hone, R.A., James Barry, R.A., Sir Martin Archer Shee, P.R.A., and William Mulready, R.A. In more recent times, notable Irish painters were the second Nathaniel Hone, Walter Osborne, R.H.A., Sir John Lavery, R.A., Sir William Orpen, R.A. Amongst the prominent artists still living in Ireland are Paul Henry, R.H.A., W. Keating, R.H.A., L. Whelan, R.H.A., Jack Yeats, R.H.A., Charles Lamb, R.H.A., Sean O'Sullivan, and John Hughes. Also Oliver Sheppard and Albert Power, the sculptors.

The Royal Hibernian Academy of Arts, founded 1821, includes painters, sculptors, and architects. The National Gallery in

Dublin (opened 1864) is one of the best of the secondary collections in Europe.

The Municipal Gallery of Modern Art is also a most notable collection, and if the thirty-nine paintings by great masters, bequeathed to it by the late Sir Hugh Lane (now in the Tate Gallery) were restored, it would be amongst the very best in Europe, next perhaps to the Luxembourg.

BALLINASLOE. See CONNAUGHT, Vol. II.

BANKING AND FINANCE. Banking. In Ireland, as in Great Britain, the joint-stock banks were preceded by private bankers, and the latter by goldsmiths. The so-called bankers of the period were, generally speaking, men without wealth or property, and unrestricted note issue by them gradually became such a scandal that the citizens agitated for the establishment of a public bank.

The first Irish joint-stock bank came into existence in 1783, under a charter granted by Parliament. For many years following its inauguration the Bank of Ireland enjoyed a wide monopoly. By degrees this monopoly was attenuated and finally the last vestige of it—save being the government bank—was swept away by the Irish Bank Charter Act, 1845. In the meantime and subsequently other joint-stock banks were organized.

There are at present nine banks operating in the Irish Free State. In the matter of solvency these banks offer an enviable record. The last Irish banking failure was in 1885.

The banking system of the Irish Free State belongs to the same general group or genus as that of Great Britain. Certain changes which did not alter radically the design of the structure were effected by the Currency Act passed in 1927 by the Irish Free State Parliament.

Under the above-mentioned Act a Currency Commission was constituted to manage and control the issue and redemption of currency notes. Eight of the nine banks operating in the Free State are associated with the Currency Commission and they are styled "Shareholding banks."

Legal tender notes are issued by the Currency Commission. The pound sterling has been adopted as the standard unit of value and this is identical with the British pound sterling.

While the banks supply the short-term needs of trade and commerce, they cannot with due regard for the obligations to their depositors and other customers grant the long-term loans often required by farmers.

This latter facility is provided by the Agricultural Credit Corporation, set up as an auxiliary to the banks.

The following statistics indicate the size of the business under three main heads conducted by the nine banks—

	1933 £	1934 £	1935 £
Deposit Current and other Accounts . . .	168,064,730	164,667,996	165,233,500
Advances and Bills Discounted . . .	77,410,690	78,134,329	76,755,282
Investments . . .	90,661,158	87,133,521	87,665,988

Taking the year 1935, the entire investments, with the exception of £9,396,217, were in Government securities. The banks' funds, invested outside the Irish Free State, amount to £80,428,188.

The total monetary circulation at the end of December 1935 was £15,611,376, consisting of £8,612,917 legal tender notes, £4,928,656 consolidated bank notes, £1,065,150 proportion of old all Ireland notes and £1,004,653 token coin. The former all Ireland notes ceased to be issued in May 1929 and have since been in course of withdrawal from circulation and replacement by Consolidated Bank Notes. The amount of token coin given above relates only to domestic issues. In addition British token coin is in circulation.

The Dublin Banks' clearing, generally accepted as reflecting the state of business, showed an increase of £8,429,000 in 1935 as compared with 1933.

Finance. Although the Articles of Agreement for a Treaty between Great Britain and Ireland under which the Irish Free State came into being were signed on 6th December, 1921, it was not until 1923-24 that the newly constituted State or Dominion exercised the full fiscal autonomy conferred upon it by virtue of that instrument.

Unencumbered by even a particle of public debt, the Free State started housekeeping on its own account under singularly fortunate and advantageous conditions.

The emergence of the Irish Free State, as a separate fiscal entity, had the effect of introducing the problem of Double Taxation in its most acute form, owing to the close community of interests existing between Great Britain and Ireland. This problem arose in connection with direct taxes such as income tax, sur-tax, stamp duty and death duties. The extent of Free State citizens' external holdings—mainly in the United Kingdom—is denoted by the fact that before the depre-

ciation in securities set in the income from investments abroad was £11,000,000 per annum. At present the Free State citizen, on producing to the British authorities the dividend warrants in respect of investments in the United Kingdom, will receive repayment of the income tax deducted at the source. By a similar procedure the United Kingdom citizen obtains repayment of the tax levied on his investments in the Free State.

Economic policy and the tendency to make ampler provision for social services have in the Free State, as elsewhere, materially affected public finance. Year after year



CUSTOM BARRIER ON THE NORTHERN IRELAND BOUNDARY
Photo: March of Time

additional outlay has to be met and taxation increases accordingly.

The appended table shows the revenue and expenditure for certain years.

	Revenue £	Expenditure £
1927-28	24,123,270	26,080,681
1930-31	24,365,197	25,266,584
1933-34	30,229,181	31,550,298
1934-35	28,770,689	31,203,500
1935-36	30,601,620	31,016,840

It will be observed that in every case the expenditure exceeded the revenue, but the deficit was only apparent, for the expenditure exhibited in the Finance Accounts included outlay of a capital nature defrayable by means of borrowed money. By deducting the sums attributable to capital outlay, the apparent deficit has been transformed into a surplus.

The Finance Accounts of the State, annually issued, are presented as set out in the foregoing table, without the adjustment or segregation as between capital and revenue charges adopted for budgetary purposes.

In addition to the revenue derived from taxes the Exchequer receipts include non-tax revenue. The distribution as between these two main sources was for the years already selected, as follows—

	<i>Tax Revenue</i>	<i>Non-Tax Revenue</i>
	£	£
1927-28 . . .	20,396,000	3,727,270
1930-31 . . .	21,005,000	3,366,197
1933-34 . . .	24,063,000	6,166,181
1934-35 . . .	23,546,000	5,224,689
1935-36 . . .	25,228,000	5,373,620

Down to 1931-32 non-tax revenue showed so little variation that it was nearly a stationary figure. Heretofore certain moneys including pre-1921-22 Land Purchase Annuities, Local Loans Annuities and refunds on respect of pensions and representing altogether about £5,000,000 were annually transmitted to Great Britain. In 1932 these payments were withheld by the Free State Government and the diversion to its Exchequer of a portion of these moneys, principally the Land Purchase Annuities, has since swollen the non-tax revenue.

For 1935-36 revenue, as contributed under the main heads was—

	£
Customs	10,223,000
Excise	5,980,000
Motor Vehicle Duties	1,000,000
Estate, etc., duties	1,125,000
Stamps	952,000
Income Tax (including surtax and supertax)	5,208,000
Corporation Profits Tax	513,000
Excess Profits Tax	227,000
Post Office	1,925,000
Miscellaneous (including fee stamps, land purchase annuities, etc.)	3,448,620
Total	£30,601,620

Owing to the numerous taxes on imports imposed within the past three or four years the yield from Customs duties has steeply risen. The revenue from Excise duties has, on the other hand, contracted instead of expanding, the reason being a steady decline in the consumption of alcoholic liquors.

The collection under the head "Excess Profits" represents arrears accrued under legislation repealed shortly after the termination of the World War.

The chief items in the expenditure of £31,106,840 in the financial year 1935-36 were—

	£
Service of Public Dept.	2,522,317
Civic Guards (Police)	1,853,437
Local Government and Public Health	1,045,592
Education	4,365,732
Old Age, Widows and Orphans' Pensions	3,695,788
Agricultural Grants in relief of Rates	1,870,000
Unemployment and National Health Insurance and Unemployment Assistance	1,824,311
Post Office	1,911,640
Army and Army Pensions	1,696,266
Lands, Forestry and Fisheries	1,651,185
Export Bounties and Subsidies	2,273,000

As one means of coping with the situation arising from unemployment, the social services have been very much extended. Only since 1932 has the outgo for export bounties and subsidies appeared as a State charge. These aids to exporters have been granted to offset the special tariffs and the taxes under the Import Duties Act, imposed by Great Britain on live stock and other imports from the Free State, as a means of recoupment for the withheld payments to which reference has already been made.



BANK OF IRELAND, DUBLIN
Built in 1729, it was the Irish Parliament House until the Union.
Photo Photopress

Four national loans have been issued by the Government since the Free State came into existence and the first of these, a five per cent stock has been converted into a four per cent security. By comparison with other countries the public debt is at present extremely low. The gross capital liabilities at the end of March 1936 amounted to £48,402,681 and against these obligations there were assets, including the Exchequer balance, valued at £29,139,773. These assets embrace advances to the Electricity Supply Board in connection with the national hydro-electric scheme and holdings in financial and industrial undertakings. Loans guaranteed by the Government amounted to £28,825,258.

Taxation is equivalent to £8 10s. 2d. per head, and the net public debt to £6 9s. 11d. per head of the Irish Free State's population.

BENNETT, THOMAS W. WESTROPP. *Leas-Chathaoirleach* (Deputy Chairman) of the Free State Senate, 1925; *Cathaoirleach* (Chairman) from 1928 to its dissolution in 1936. He was educated at St. John's College, Kilkenny; the Queen's Service Academy, Dublin. He was a member of the committee of the Irish Agricultural Organization Society, founded by the late Sir Horace Plunkett, and a director of the Irish Agricultural Wholesale Society. He has farmed on an extensive scale, and devoted his life to the promotion of the agricultural industry, giving much attention to the improvement of dairy cattle. He was largely responsible for the Limerick and Clare Farmer's Association, and acted as its President during the ten years of its existence. He was President of the Kilmallock Agricultural and Industrial Society. He contested East Limerick as an independent Nationalist in 1910.

BLARNEY STONE. See article, Vol. I.

BRAY. See LEINSTER, Vol. V.

BRIDGET, SAINT. See article, Vol. II.

BROWN, SAMUEL LOMBARD, K.C. He was educated at Queen's College, Cork; M.A. Queen's University (Ireland); Barrington Lecturer in Political Economy, 1879-1883; called to the Irish Bar 1881 K.C. 1899; Bench of King's Inns, Dublin, 1905; Senator, Irish Free State, December, 1923 to December 1925, from February 1926 to dissolution of the Senate in 1936. Was Chairman of joint committees of the *Oireachtas* on the Dublin Electricity Supply Bill, 1924, and East Leinster Electricity Supply Bill, 1924; and on Membership of the *Oireachtas*, 1926. Member of the Joint Committee on Standing Orders (Private Business), and several other Parliamentary committees. Chairman of the Tribunal of Inquiry into Prices in 1926. While at the

bar, Mr. Brown was one of the leading lawyers of his day, and was particularly sought after on the Chancery side.

BURGESS, RT. HON. HENRY GIVENS (born 1859). He was educated privately. Five years Scottish representative, and twenty years Irish Traffic Manager of the London and North Western Railway Company, Shipping and Coal Controller in Ireland during the World War; Director General, Transport, Ireland, 1919-20; member of the Dublin Port and Docks Board for eighteen years. Later he became the General Manager of the London North Western Railway, and subsequently General Manager of the London Midland and Scottish Railway. Was also director of the Great Southern and Western Railway, Ireland. He was elected a member of the Free State Senate in 1922, retiring in 1928. A man of the widest commercial experience, his advice was sought, and always readily and freely given, to those engaged in the promotion of Irish industry. Despite repeated efforts made to enlist his sympathy and co-operation in party politics he refused to become entangled, and always maintained his independence.

BURKE, EDMUND. See article, Vol. II.

BYRNE, ALFRED (born 1882). Born and educated in Dublin, he has been Lord Mayor of that city since 1931; he was member of the House of Commons for the Harbour Division of the City of Dublin from 1915 to 1918. He is a Trustee of the Royal Liver Friendly Society, Liverpool and was chairman of the National Health branch of the Society in Dublin. He represented the city division, of North Dublin, in *Dail*



ALFRED BYRNE
Photo. Topical

Eireann from 1922 to 1927. At the second general election of 1927 he received the highest number of first preference votes cast for any candidate in the Free State. He resigned his seat in the *Dail* in 1928, and was elected a member of the Senate, but resigned in 1931, and was re-elected, as an Independent member of the *Dail*, at the general election of 1932, and again in 1933. He is an alderman of the Corporation and has done immense work for the housing of the working classes in Dublin. He is an active member of the St. Vincent de Paul Society, and other charitable institutions in Dublin.

He was created Grand Cross of the Order

of Saint Sylvester by His Holiness Pope Pius XI. He is, perhaps, the most popular man in the Irish metropolis and is literally loved by the poor.

CARLOW. See LEINSTER, Vol. V.

CARRICK-ON-SHANNON. See CON-
NAUGHT, Vol. II.

CASTLEBAR. See article, Vol. II

CAVAN. See article, Vol. II.

CELTS. See article, Vol. II.

CLONMEL. See MUNSTER, Vol. VI.

COBH. See MUNSTER, Vol. II.

COLLINS, MICHAEL. See article, Vol. II.

CONNAUGHT. See article, Vol. II.

CONNEMARA. See CONNAUGHT, Vol. II.

COOPER, MAJOR BRYAN RICCO (1884-1930). Landowner. He was educated at Eton and Woolwich. Entered the British Army in the opening years of the century. During the World War he served with the 10th Irish Division in Gallipoli and Macedonia and was later attached to staff, Salonika Army and War Office. He was several times mentioned in despatches. M.P. (Con.) Co. Dublin, 1910; British Press Censor in Ireland, 1919; first elected as Independent T.D. to the Dail in 1923; stood as Cosgrave candidate, September, 1927, and was elected. Publications: *10th Irish Division in Gallipoli in 1917, The Collar of Gold*.

Although a very strong Unionist in pre-Treaty days, Major Cooper entered wholeheartedly into the business of the Dail from the day he first took his seat as a Deputy. An eloquent and cultured speaker and an able debater, he was always practical and helpful in his outlook.

CORK. See article, Vol. II.

CORRIB, LOUGH. See CONNAUGHT, Vol. II.

COSGRAVE, WILLIAM T. See article, Vol. II.

CRAIG, SIR JAMES (died 1934), Physician. Born in Co. Antrim, he was educated at Dublin University, and later practised in Dublin. He was King's Professor of Medicine, at Trinity College, Dublin; Physician to Sir Patrick Dun's Hospital; Consulting Physician to Dr. Steeven's Hospital and Crookslong Sanatorium. An ex-President of the Royal College of Physicians, Ireland, he was also the author of numerous publications in medical journals. He was returned as member for Trinity College to the southern Irish Parliament under the Act of 1920, and he and his three colleagues, also returned for T.C.D., were the only members to attend a meeting of that body as such, held in June, 1921. When the Anglo-Irish Treaty was approved by Dail Eireann on 7th January, 1922, a meeting of the members of the southern Parliament was convened and held in the Mansion House, Dublin, for the definite purpose of setting up the Provisional Parliament

in accordance with article 17 of the Treaty. All the pro-Treaty members attended, as also did Sir James and his colleagues. He represented Trinity College as a member of the Dail from the general election of 1922 until his death.

CROSBIE, GEORGE (died 1934). Journalist and Barrister-at-Law. He was the son of Thomas Crosbie, proprietor of the *Cork Examiner*. He was educated at St. Vincent's Seminary, Cork, and at Tullabeg, Kings County; was called to the Irish Bar in 1890. One of the founders and, for seventeen years, chairman of the Irish Industrial Development Association in Cork; purchased Cork Park from the Cork Corporation, on behalf of Henry Ford (Ford Motor Manufacturers) in 1916, and the Rushbrooke Docks for Furness Whulhy in 1917. Chairman, Thomas Crosbie and Company. Contested Cork city, unsuccessfully, in the interests of the Irish Parliamentary Party in 1909; elected a member of the Free State Senate in 1932. He was a very capable journalist and was always deeply interested in the welfare of the members of the profession.

DAIL EIREANN. See article, Vol. II.

DAVITT, MICHAEL. See article, Vol. III.

DERMOT MACMURROUGH. See article, Vol. III.

DESART, ELLEN, DOWAGER COUNTESS OF DESART (1857-1934). She married in 1881 William Ulick O'Connor, fourth Earl of Desart (he died 1898). Received the freedom of the city of Kilkenny, 1910; President of the Kilkenny Branch of the Gaelic League, 1913-1915. Chairman of the Board of Directors, Kilkenny Woollen Mills. She was an original member of the Free State Senate, and though constant in attendance, intervened seldom in debate.

DE VALERA, EAMON. See article, Vol. III.

DILLON, JOHN. See article, Vol. III.

DUBLIN. See article, Vol. III.

DUNDALK. See article, Vol. III.

DUN LAOGHAIRE. See LEINSTER, Vol. V.

DUNLOP, JOHN BOYD (1840-1921). Inventor of the pneumatic tyre which revolutionized cycling.

Though a Scot by birth, he was Irish by adoption and spent the whole of his professional life in Ireland. He was a Veterinary Surgeon and practised in Belfast. He had procured a miniature bicycle or tricycle for his small, delicate son, so that he might get some exercise. He then thought out how to relieve the child from the heavy bumping and jolting. Procuring a garden hose pipe, he pumped air into it and tied it on to the rim of the wheel. That was the beginning of the invention. The efficiency, speed, and

comfort of the pneumatic tyre was demonstrated on numerous cycling tracks by members of the Du Cros family, then resident in Dublin. The formation of a company, later to become the Dunlop Rubber company followed. Dunlop was for some years before his death a Director of one of Dublin's best known drapery establishments.

EDUCATION. It is no exaggeration to say that, with the possible exception of Alsace-Lorraine, no country in post-war Europe has attempted such a profound change in the education of its people as that inaugurated by the first government of the Irish Free State in the year 1922. This change and the consequent re-orientation of the entire system of education derives from a clause in the Constitution which declares the ancient speech of Ireland to be the national language of the State. In terms of school practice this change meant the immediate introduction of the Irish language as a subject in every standard of every type of school, its use as the medium of instruction in the schools of the Irish-speaking districts, and finally its gradual extension as the vehicular language of school life in every part of the State.

A Unique Problem. The difficulty of this task in the greater part of the State can be appreciated, when it is understood that, prior to the Anglo-Irish Treaty, the language was taught only as an "extra" subject outside school hours, in a limited number of schools. Consequently, the majority of teachers were ill-equipped for the work, and

to dominate the other. Catalonia has its language from time immemorial, and desires only to raise its status by making it the medium of instruction in its schools and colleges. The prestige of the language and literature of the French nation for a thousand years is behind the language drive in



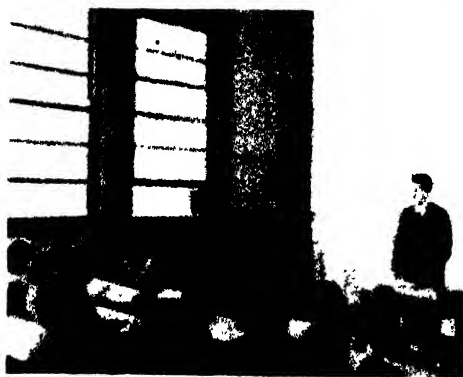
CHILDREN IN NATIONAL SCHOOL

Photo: March of Time

Alsace-Lorraine. The Irish Free State can boast only the idealism of a government of young men deriving their inspiration from the past, earnestly trying to make contact with that Gaelic Ireland which Dr. Johnson described as "the school of the west," and which, though its cultural continuity be somewhat fragmentary, has survived to this day in that "Celtic fringe" facing the Atlantic sea-board.

The Preparation of Teachers. The first question to be tackled was the equipment of teachers for the task before them. To that end summer courses were instituted in the period 1922-28 at a total cost of £300,000, and continued in a modified and less costly form down to the present. Teachers over 45 years of age were exempted from these courses, yet, by the year 1935 over four-fifths of the 14,413 teachers engaged in the schools of the state possessed either a qualification to teach the language or a certificate of competency to use it as the medium of instruction.

Meanwhile the method of recruitment has been radically altered, approaching, seemingly, the plan adopted by the French in Alsace-Lorraine, when several hundreds of young teachers from the interior were drafted into the schools of the regained Provinces, and placed in charge of the junior pupils. In 1926 the Free State established seven preparatory colleges accommodating 636 students to act as tributaries to the training colleges. Entrance to these colleges is



MODERN COUNTRY SCHOOL

Photo: March of Time

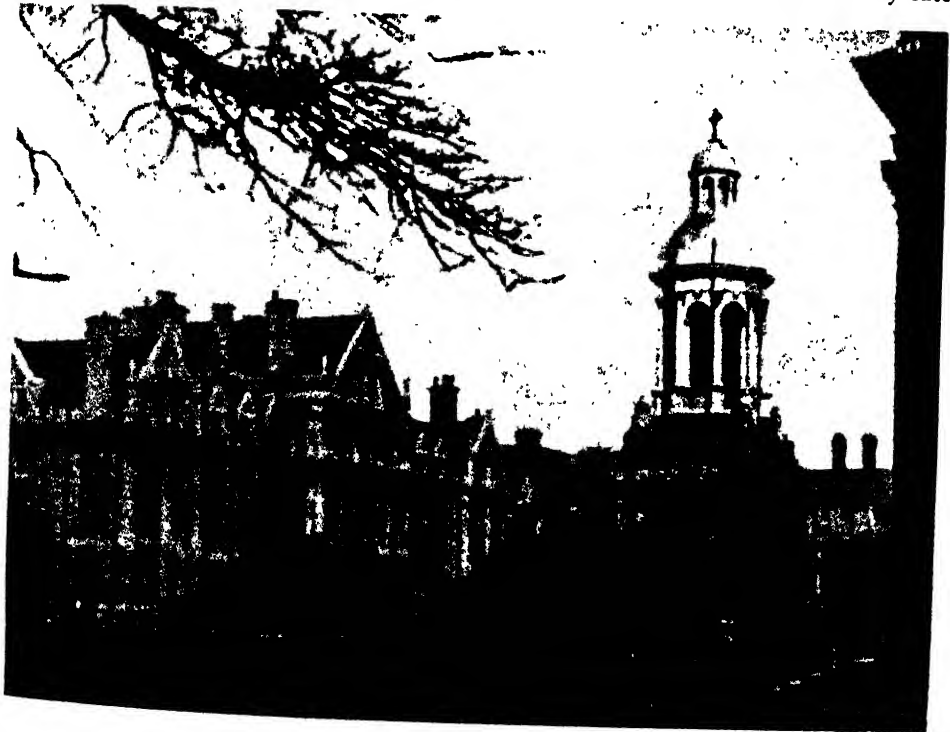
the language itself was a living tongue, only in the congested and poverty stricken districts of the south, west and north. As a problem it has no counterpart in any European country. Belgium has two races and two languages occupying in the main separate and distinct localities, neither waiting

reserved for students possessing fluent oral command of the language, eighty per cent of these students coming from the Irish speaking districts, and from the march lands separating the two cultures. Irish is the sole teaching medium in these colleges. Here each future teacher selects from a broad programme of studies his subjects for a four-year secondary school course, and thus completes his general education without any professional bias whatever.

Professional and Liberal Studies. There are five Training Colleges in the Irish Free State—four Roman Catholic and one Church of Ireland. The programme, like that of the English and Scottish colleges, while giving priority to professional training, contains certain options and provides for specialization in the student's best subject, but enjoins on all, courses in Irish literature and history, music, rural science, hygiene, Sokal drill and drawing. The Church of Ireland College is now for all practical purposes incorporated with Dublin University, so that a teacher's course there counts towards a degree. The Catholic colleges have a similar but less intimate relation with the National University, whereby all who wish may, while qualifying

as teachers, secure their first University examination also. Owing to this co-relation of professional and liberal studies a considerable number of young teachers, through University extension lectures, complete their degree course, the number to date being 670—an increase of 60 on the previous year. In the training college, as in the preparatory college, Irish is the language of class-hall and play-ground. A further important change issues from this, as well as from the Gaelicising urge of the Department of Education, namely, the number of schools in which Irish is the medium of instruction is increasing annually throughout the twenty-six counties, leaping in the past year from 225 to 570.

State Policy in Education. While the number of primary schools in the State shows a serious decline, due mainly to a fall in the school-going population, and partly to the amalgamation of small rural schools, the number of secondary schools is increasing at an average of four schools per year. So that the percentage of boys and girls who now receive a secondary education is relatively higher than it ever was. There are 319 such schools in the Irish Free State. They cater



TRINITY COLLEGE, DUBLIN
The central campanile was built in 1853.

Photo: Irish Independent



UNIVERSITY COLLEGE, CORK

A Constituent College of the National University, it stands on a commanding position overlooking the River Lee.

Photo Topical

for 33,499 pupils and employ 1513 registered and 1348 unregistered teachers. Registered teachers only are entitled to the official scale of salaries which range from £200 to £410 per annum. Three conditions must be satisfied to secure registration. The teacher must possess a primary degree of a University, together with a Higher Diploma in Education, which is a post-graduate qualification, must teach eighteen hours per week, and have at least two years' teaching experience. A considerable number of the unregistered teachers possesses the necessary academic qualifications, but owing to the exigencies of school or programme, one or other of the remaining conditions cannot be fulfilled; hence the relatively large number of unregistered teachers.

There are four grades of secondary schools officially designated A, B₁, B₂, and C-schools, their grading being determined by the reaction of the school authorities to the policy of the State in education. In the A-schools Irish is the teaching medium except when the language being taught is itself the medium. There are 78 schools of this type—an increase of 17 on the number for the previous year. The B₁-schools of which there are 45 do half their work through Irish. The B₂-schools numbering 70 teach two subjects through Irish, while the C-schools, which constitute the remainder, use English, as the medium of instruction. In all schools history and geography, the sciences, modern languages and the classics are taught. The Catholic Diocesan Colleges and the large residential seminaries under the direction of Regular Clergy are the strongholds of classical learning, while the schools of the Christian Brothers tend rather to emphasise the sciences and modern languages.

EMMET, ROBERT. See article, Vol. III.

ESMONDE, SIR THOMAS HENRY GRATTAN, 11th Bart. (1862-1935). Born at Pau, he was eldest son of the 10th baronet, M.P. and Louisa, grand-daughter of the Rt. Hon. Henry Grattan, M.P. He was educated at Oscott. He was a Member of the British Parliament for many years, representing Co. Dublin, South, 1885-91; West Kerry, 1891-1900; North Wexford, 1900-19. He was High Sheriff, Co. Waterford, in 1887. He published various books of travel in America, Africa, Australasia, and the South Sea Islands, and various articles on travel and sport and folklore and Irish antiquities. In the early years of the present century, Sir Thomas joined the ranks of the Sinn Féin movement, then in its infancy. He soon, however, returned to his original political affiliations, and became a devoted follower of John Redmond, the leader of the Irish Parliamentary Party. He was a Member of the Free State Senate, 1922-34.

EVERARD, COLONEL SIR NUGENT TALBOT Bart. (born 1849). Educated at Harrow and Trinity College (Cambridge); High Sheriff, Co. Meath, 1883; late Lieut.-Col. commanding, and Hon. Col., 5th Batt. Prince of Wales Leinster Regiment. Member of the Free State Senate, 1922-29. He was one of the first in Ireland to revive tobacco growing on an extensive scale in the late years of the nineteenth century, and, also, to manufacture the home-grown leaf for pipe and cigarette smokers. When the *Fianna Fáil* (De Valera) Government took office (1932) they made many substantial concessions to the industry, which has since grown considerably.

FAHY, FRANCIS (born 1882). Barrister-at-law, *Ceann Comhairle* (Speaker), *Dail Eireann*. Born in Galway, he was educated

Mungret Jesuit College, Limerick, and the National University of Ireland. One of the founders of the Irish Volunteers, he was sentenced after the 1916 rising to ten years penal servitude for participation in the rising. Entered the Dail with Mr. de Valera and his party in 1927. Elected Speaker after the General Election of 1932. He is Chairman of the Civil Service Commission of the Irish Free State. A native Irish speaker, he took a prominent part in the foundation of the Gaelic League and the promotion of the Irish language movement.

FENIANS. See article, Vol. III.

FLAG, I.F.S. See **FLAGS**, Vol. III.

FLOOD, HENRY. See article, Vol. III.

GAEL AND GAELIC LANGUAGE. See articles, Vol. III.

GALTÉE MOUNTAINS. See **MUNSTER**, Vol. VI.

GALWAY. See article, Vol. III.

GLENNAVY, JAMES HENRY MUSSEN CAMPBELL (1851-1931). **FIRST BARON**; Privy Councillor, Ireland, 1905; elected *Cathaoirleach* (Chairman), *Seanad Éireann* (Senate

of the Free State) at its first sitting, December, 1922; was Vice-Chancellor, Dublin University from 1919; Chancellor of the United Dioceses, Dublin, Glendalough, and Kildare, and the Dioceses of Clogher, Tuam, Waterford, and Kilmore; Benchet of the King's Inns, 1894. Benchet, Gray's Inn, 1901. He was educated at Kingstown School and Trinity College, Dublin. Called to Irish Bar, 1878, he became Q.C. in 1890. M.P., Saint Stephen's Green Division of Dublin, 1898-1900; M.P., Dublin University, 1903-18; Solicitor-General, Ireland, 1901-5; Attorney-General, 1905, and again 1916; Lord Chief Justice, 1916-18; Lord Chancellor, Ireland, 1918-21. Lord Glenavy was a lawyer of very great distinction, and was an authority on Parliamentary procedure. A strong party man prior to the Treaty and a close personal friend of Lord Carson, Lord Glenavy entered enthusiastically into shaping and perfecting the Free State Legislature, and brought the weight of his great experience and ability into play in the conduct of the proceedings of the Senate.



O'CONNELL STREET, DUBLIN
One of the principal business streets of Dublin. A prominent monument is the Nelson Pillar. In the centre is a statue of Daniel O'Connell.

Photo: Topical

GOGARTY, OLIVER ST. JOHN (born 1878). Born in Dublin, he was educated at Stonyhurst College, and Dublin and Oxford Universities. He became Fellow, Royal College of Surgeons, 1907, and is Hon. Fellow R.H.A.; Rhinologist and Laryngologist, Richmond Hospital, Dublin; Visiting Surgeon, Meath Hospital and County Dublin Infirmary. Member of the Irish Free State Senate until its dissolution in 1936. In addition to his eminence in the medical profession, Dr. Gogarty is an artist and a poet. In 1937 he published his reminiscences, entitled *As I Walked Down Sackville Street*.

GRATTAN, HENRY. See article, Vol. IV.

GREEN, ALICE SOPHIA AMELIA. She was born in Kells, Co. Meath, and educated privately. Her marriage in 1877 to J. R. Green, L.L.D., did not interfere with her political and historical interests, which were shared by her husband, and she continued to write extensively. Her published works include: *Short Geography of the British Isles and Town Life in the Fifteenth Century*. She also edited *The Conquest of England* and editions of *The Making of Ireland and Its Undoing*, *Irish Nationality*, *Old Irish World*, and *The History of the Nineteenth Century*. She was a Member of the Free State Senate from 1922 to 1929, and presented the Senate with a beautiful casket, which was laid upon the table each day during the sittings of the House up to the time of its dissolution in 1936.

GRIFFITH, ARTHUR (1872-1922). Irish political leader. Educated at the Christian Brothers' Schools, Dublin; he worked as a printer in his early days in Dublin and South Africa. Founded and edited the weekly paper *Sinn Fein*, 1906-1915; was editor of *Nationality* from 1916. He was elected M.P. for Cavan in the Sinn Fein interest in 1918, but in pursuance of the policy of his party did not take his seat in the House of Commons. He was Chairman of the Irish Plenipotentiaries who met the British Government delegates for the purpose of arranging a settlement of the Irish question and signed the Treaty on the 6th December, 1921. On the approval of the Treaty by Dail Eireann, 7th January, 1922, he was elected Chairman of the Dail in succession to Mr. de Valera, who resigned. He died suddenly in Dublin,



ARTHUR GRIFFITH
Photo: Central

13th of August, 1922. His best known work is his short history, *The Resurrection of Hungary*.

Arthur Griffith was the life and soul of the Sinn Fein movement, but he relied on moral, rather than physical, force to attain his objective. Grattan's Parliament, of 1782, remodelled on Dominion lines was his main ambition.

GRIFFITH, SIR JOHN PURSER (born 1848). Born in Holyhead, Wales; he was educated at Dr. Bedd's School, Devizes; Fulneck School, Leeds; and Trinity College, Dublin. Assistant Surveyor of Co. Antrim, 1870; Assistant Engineer, Dublin Port and Docks Board, 1871; Chief Engineer, Dublin Port and Docks Board, 1898; retired 1913. Member of the Royal Commission on Canals and Waterways; Advising Engineer to the Government on Wicklow Harbour and Fore-shore Works, and on Arklow Harbour, elected a Commissioner of Irish Lights, 1913. President of the Institution of Civil Engineers, 1919-20. He served on a number of Government Commissions and was a Member of the Senate, 1922-36. Sir John had on hand, for a number of years, a scheme for the harnessing of the river Liffey for the purpose of supplementing the Shannon Electricity Scheme. Elaborate and expensive maps and drawings had been prepared. When the Government decided to take over the scheme, he handed over to them, *gratis*, the whole of his plans.

HASLAM, ANNA (1829-1922). Pioneer of Women's Suffrage Movement in Great Britain and Ireland, she was born in Yougal, Co. Cork, of Quaker stock. She was 18 years of age at the time of the famine of 1847. She married in 1854, and her husband, like herself, was an ardent feminist. Both were students and followers of Herbert Spencer and John Stuart Mill. She signed the first petition for woman's suffrage, presented to the House of Commons by Mill. She founded in 1876 the Irish Women's Suffrage and Local Government Association, of which she was Hon. Secretary and afterwards President; was a strong advocate of the abolition of State regulation of vice, and organized meetings in support of that cause in Dublin. She edited a paper called *The Woman's Advocate*, and assisted in pressing forward the Married Women's Property Act, helped to secure equal educational facilities for Irish girls in Intermediate Education and the old Royal University of Ireland. In politics Mrs. Haslam was a Unionist and Imperialist, and was strongly opposed to militant tactics on the part of women.

HEALY, TIMOTHY. See article, Vol. IV.

HIGH COMMISSIONER. See article, Vol. IV.

HISTORY, IRISH. See IRELAND, Vol. IV, and articles on the Provinces.

HICKIE, MAJOR-GENERAL SIR WILLIAM BERNARD (born 1865). He was educated at Oscott College and Sandhurst and joined the Royal Fusiliers in 1885. He served throughout the Boer War (1900-02) and during the World War, he was in command of a brigade of the 16th Irish Division (1914-18). He became a Member of the Free State Senate in 1925, and remained as such to its dissolution in 1936. Takes a foremost part in the Irish Ex-service Men's Association in Dublin and the Free State.

HOME RULE. See article, Vol. IV.

HYDE, DOUGLAS. Known in Ireland as *An Craoibhin Aoihbhinn*, he is historian, poet, and folklorist. He was educated at Trinity College, Dublin. He has been President of the Gaelic League since its foundation in 1893. His published works include *Beside the Fire, Love Songs of Connacht, A Literary History of Ireland, Medieval Tales from the Irish* (being Volume I of the Irish Texts Society, 1899), a volume of poems in Irish; *The Tinker and the Fairy*

(all-Irish plays), etc. Member of the Irish Free State Senate from 1925 to 1928. Dr. Hyde is an outstanding personality in Irish life, and has done more than any man of his time for the promotion of the Gaelic language.

INDUSTRIES AND MANUFACTURES.

While recognizing that the Irish Free State is and must remain a predominantly agricultural country, the Government has at the same time aimed at strengthening the industrial or manufacturing arm in order to produce a more balanced national economy. This has been accomplished by the imposition of tariffs, the prescription of quotas, and in other cases the prohibition of imports except under licence.

Under the Free Trade regime a goodly number of manufacturing industries existed, and many of them were in a thriving condition. Chief among these undertakings were brewing and distilling, biscuit making, milling, bacon curing, the production of aerated waters, woollen and worsted goods, agricultural machinery, boots and shoes, fertilizers, furniture, and hosiery.



HAND INDUSTRY

In many parts of the Gaeltacht, the Government is giving encouragement to the traditional crafts. 1. A mother and her four daughters crocheting. 2. Poplin weaving on an ancient loom; the material produced is very beautiful. 3. Tie-making. 4. Irish potter demonstrating his skill at the Royal Dublin Society's Show.

Photos: High Commissioner for the I.F.S.; Irish Independent

Viewed from both the national and international aspects, brewing is the leading industry. There are to-day fifteen breweries in the Irish Free State, the first on the list being the great Dublin firm of Arthur Guinness, Son & Co. Ltd., which has by far the largest output of any firm of brewers in these islands or indeed in the world. The present issued capital is £9,000,000, the market valuation of the shares being approximately £57,000,000. It needs the barley grown on 160,000 acres to supply Guinness's with malt for one year. In 1935 the exports of porter and stout amounted to 1,331,632 standard barrels, all, with the exception of a



BASKET MAKING IN DONEGAL

The sally (willow) trees provide the material for this rural industry.

Photo: Irish Tourist Association

fractional quantity, the output of Guinness's brewery. This export trade, conducted with Great Britain and a multitude of foreign countries, represents three-fifths of the value of all the Free State's non-agricultural exports.

In 1935 the output of the Irish whisky distilleries was 668,469 gal., and 162,784 gal. were exported.

In common with brewing and distilling, the manufacture of biscuits and of aerated waters was highly developed in the Free State prior to the change in the system of government. The biscuits produced by the firm of W. & R. Jacob, practically the sole manufacturers, are exported to all parts of the world. Taking exports of manufactured articles, biscuits come next to porter in respect of value. In the manufacture of aerated or mineral waters, the Free State holds a high place, and it is the proud boast of one of the firms engaged in the industry that it invented soda water. Emphasis has been laid on the foregoing industries because, besides substantially supplying the home needs, they account for 72.3 per cent of the manufactured goods exported by the Free State.

The other factories, old and new, are in the main designed and operated to provide for the home market. Those, however, producing textile goods and apparel do an export trade, capturing the bulk of the residue left after credit has been given for the exports of spirits, porter, biscuits, and aerated waters.

To meet the situation created by the establishment of the Free State, two leading British firms started tobacco factories in Dublin. These, together with the old-established factories, supply the home demand.

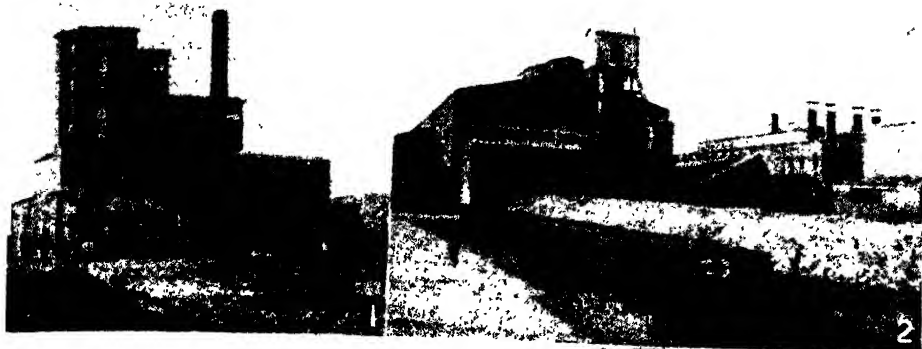
Since 1932 the import of completely assembled private motor cars and commercial vehicles has, under a quota arrangement, been restricted to a negligible percentage of the total number sold every year. All the assembling work is at present done in the Free State, and provision has been made for the production in this way of twenty makes of cars. For the manufacture of tyres, a monopoly has been granted to the Dunlop Co.

The Censuses of Industrial Production taken during the past few years were limited to certain industries. The gross output, measured by value of these industries for the years 1929 and 1935, was as follows—

	1929	1935
Brewing ¹	10,428,979	8,962,265
Grain Milling	7,577,782	7,859,450
Tobacco	5,225,746	5,979,221
Bacon Curing	5,955,995	5,163,741
Sugar, Confectionery and Jam	1,178,916	1,680,973
Whisky Distilling ¹	208,291	285,418
Clothing and Millinery	1,358,773	2,518,407
Boots and Shoes	339,197	1,297,726
Metal Trades (excluding Engineering)	544,873	1,311,426
Printing, Publishing, and Engraving	1,794,007	2,116,105
Woollens and Worsted	855,615	959,860
Linen, Cotton, Hemp and Jute	496,703	854,064
Hosiery	276,259	890,324
Wood, Furniture and Upholstery	560,396	694,557
Engineering and Implements	286,166	607,027
Bricks, Glass, and Monumental Masonry	229,915	519,086
Papermaking and Manufactured Stationery	174,007	543,505
Soap and Candles	517,504	508,704
Aerated Waters	296,550	332,934
Malting	558,281	374,396
Fertilizers	573,770	379,631
Chemicals, Drugs, Paints, and Polishes	314,000	655,039
Coach and Wagon Building, Assembly and Construction of Motor Vehicles, and Assembly of Cycles	1,636,406	2,238,250

¹ Inclusive of Duty; less drawbacks on export.

² Exclusive of duty.



INDUSTRIAL IRELAND

1. A factory at Cooley, Co. Louth, which extracts industrial alcohol from potatoes. 2. One of Ireland's four beet sugar factories, which supply 79 per cent of the nation's sugar needs. 3. Stacking barrels of Guinness's stout for export. This one firm exported over 1,000,000 standard barrels in 1935. 4. The opening of a shoe factory in Sligo. The output of boots and shoes quadrupled in value between 1929 and 1935. 5. Ford motor factory at Cork. Although imports increased greatly in 1936, the value of home production is above the 1929 level. 6. Giant churn in one of the creameries, which handle nearly 900,000 cwt. of butter annually. 7. Flour mill at Cork. 8. Paper mills at Clondalkin, Co. Dublin

Photos: Irish Independent; Irish Times; March of Time; Photopress

An idea of the value of what is omitted from the foregoing list may be gathered from the complete censuses in the years 1926, 1929, and 1931. The gross values shown by the inquiries made in those years were: £59,477,000, £64,139,000, and £54,884,000 respectively. Services embraced in these figures, as well as transportable goods, accounted for a little over £10,000,000 of the total values each year.

The manufacture of sugar from home-grown beet is a wholly new industry. By way of experiment, a single factory was erected ten years ago, and the company by whom it was worked received a direct subsidy from the State, together with an indirect subsidy in the shape of remission of Excise Duty. The industry is at present a State enterprise. Between shares and debenture stock the company in control has obtained £2,000,000 to finance the undertaking. The State holds half the share capital and guarantees the debenture stock, amounting to £1,000,000. No direct subsidy is now paid, but indirectly the company is subsidized to the extent of over £1,000,000 by exemption from nearly the whole of the excise duty. In the latest campaign season, the four factories produced 79 per cent of the country's requirements in sugar.

Even with the enlarged industrialization, non-agricultural commodities valued at £31,134,020 were imported in 1935. The principal items in this list of imports were: coal, iron and steel, and manufactures thereof; machinery; electrical goods and apparatus; vehicles, parts and accessories; timber and manufactures thereof; textiles, apparel, paper and cardboard, petrol, oils and soap, cutlery, hardware and instruments, chemicals, drugs, perfumery, and colours.

INISHMORE, ISLAND OF. See CONNAUGHT, Vol. II.

IRELAND. See article, Vol. IV.

IRISH MOSS. See article, Vol. IV.

JAMESON, RT. HON. ANDREW, P.C. (born 1855). Chairman, John Jameson & Sons, Ltd.; Director, Bank of Ireland, Governor, 1896-98; Chairman of the Irish Lights Commissioners; President, Dublin Chamber of Commerce, 1921; High Sheriff, Co. Dublin, 1902. In the Free State Senate, Mr. Jameson spoke with authority on industrial, commercial, financial, and economic questions. He was a strong advocate of Irish barley growing, the raising of live stock, and other branches of agricultural produce. He represented the Irish Unionist interests at many conferences with Mr. Arthur Griffith and Mr. Eamon de Valera before the Treaty, and took an active part in bringing about the truce in June, 1921.

JOYCE, JAMES. See article, Vol. V.

KENNEDY, HUGH (1879-1936). First Chief Justice of the Irish Free State. Born in Dublin, he studied at the old Royal University of Ireland. He was called to the Irish Bar in 1902. He was identified with the Sinn Féin movement from early days, and was a close friend of both General Michael Collins and Mr. Arthur Griffith. He was also associated with ex-President Cosgrave, and was Attorney-General in the Cosgrave Government, 1922-24. He became a Member of the Dail in 1923, resigning the following year when appointed Chief Justice. With Mr. Kevin O'Higgins, then Minister for Justice, he piloted the first *Saorstát* Courts of Justice Act through the *Oireachtas*. Mr. Kennedy was a member of the Gaelic League from 1899 and was a fluent Irish speaker. He was a member of the first delegation from the Free State to the League of Nations, 1923; and a member of the Committee of Jurists on the Draft Treaty of Mutual Guarantee at Geneva, 1923.

KILDARE. See LEINSTER, Vol. V.

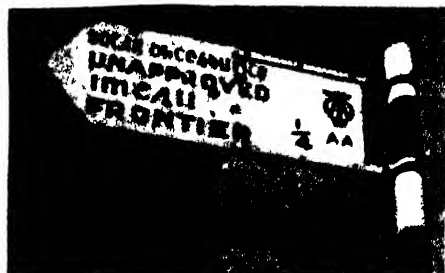
KILKENNY. See article, Vol. V.

KILLARNEY AND KILLARNEY LAKES.

See articles, Vol. V.

KNOCKMEALDOWN MOUNTAINS. See MUNSTER, Vol. VI.

LANGUAGE. The official language of the Irish Free State is known as Gaelic (*Gaeil*), and is perhaps the most important of



A POLITICAL POINTER

Photo: *March of Time*

the Celtic group of Indo-Germanic tongues. The other members of this group are: Welsh, Scottish Gaelic, Breton, Manx, and Cornish—the last-named now extinct. The name *Gaedhlig* is derived from *Gaedheal Glas*, in connection with whom Geoffrey Keating (*d. circa 1646*), in his *Foras Feasa ar Éirinn*, or *History of Ireland*, says—

"The Gaels (are named) from comely *Gaedheal Glas*, The Scots from *Scota*"
(Dineen's translation.)

Other forms of the name are: *Gaedhlighe* (Connaught), *Gaedhealg* (the literary form

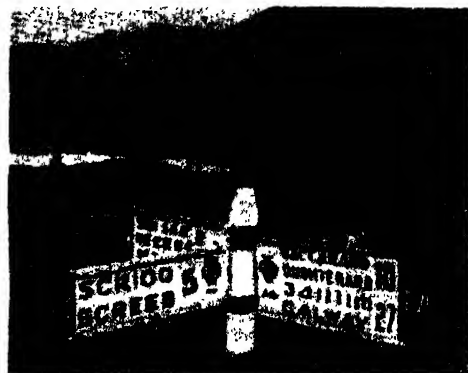
= Latin (*lingua*) Gadelica, Gaoluinn (Munster).

From the viewpoint of the philologist, Gaelic is a most interesting and important language. The pity is that most American and Continental philologists (with notable exceptions like Thurneysen, Pedersen, Kuno Meyer, and—in America—Buck) know so little about it that they have not been in a position to utilize its vocables for the purposes of their otherwise satisfactory textbooks on the subject. One illustration will suffice. The mathematician and Sanskrit scholar, Hermann Grassman (1809-77), discovered an important law which removed some apparent exceptions to Grimm's Law. He found that roots, in Greek and Sanskrit, may not begin and end with an aspirate consonant (such as are found, for instance, in English compounds like "bunk-house"). Gaelic affords many illustrations and confirmations of this law; e.g. Gaelic "dubh" (black) and Greek *τυφλός* (blind) are easily reconciled by Grassman's Law. Initial dh-gave Gaelic *g*-, and *per se* Greek *θ*, but as the root here originally ended in an aspirate, Greek shows *τ*- instead of *θ*.

It would be impossible in a short article to make even a cursory survey of Gaelic literature. It is more important to look at the most recent developments in the struggle to revive Gaelic. Among the problems which the Irish Government had to face, two important ones regarded the national language. Firstly, young writers must be encouraged to write Gaelic literature, either original, or in translations from Greek, Latin, Welsh, English, French, German, etc. With this end in view, an organization known as the "Gúm" was formed to print and publish such efforts, when they were worth it, and also to remunerate their authors. Along these lines a great deal of useful work has been done, and some world-classics have been translated, such as *David Copperfield* and *Oedipus Rex*, to mention only two; while some clever original work also has seen the light. It is not too much to expect that, as time goes on, and educational standards are raised, the Government's efforts will be rewarded by creative work of a high order.

The second problem—that of Gaelic in the schools—bristles with difficulties. Sudden changes of power and policy are apt to unhinge people's *savoir faire*. Where, hitherto, a desultory daily hour's teaching of Gaelic was all that was demanded, or allowed, in the primary schools, teachers were now faced with the necessity of teaching everything through the medium of Gaelic—whether they knew Gaelic or not! Here the real issue at stake was ignored. The entire build and construction of Gaelic

was left to take care of itself. Until this is studied in detail and on scientific lines, good-bye to all euphuistic theories about reinstating the national language. The language itself is the *materia prima* of the national self-expression. One must study this, exploit it, reduce it to an exact science, before one can venture to teach everything or, indeed, anything—through the medium of Gaelic. Ninety per cent of the teachers will agree that, as things stand, the teaching of everything "through the medium" (as it



COUNTRY SIGN POST

A reminder that there are two languages.

Photo: March of Time

is cynically called) is a fiasco. Ninety per cent of them, to put it bluntly, do not know Gaelic scientifically (even though they, in some cases, speak it fluently).

Though the above remarks sound pessimistic, the writer is nevertheless an optimist. The remedy is at hand. *Quaere primum fundamentum*. Let teachers be solidly grounded in the subtleties of Gaelic syntax, and they will have some chance of instilling into their pupils' minds a sense of the beauty of thought enshrined in the language.

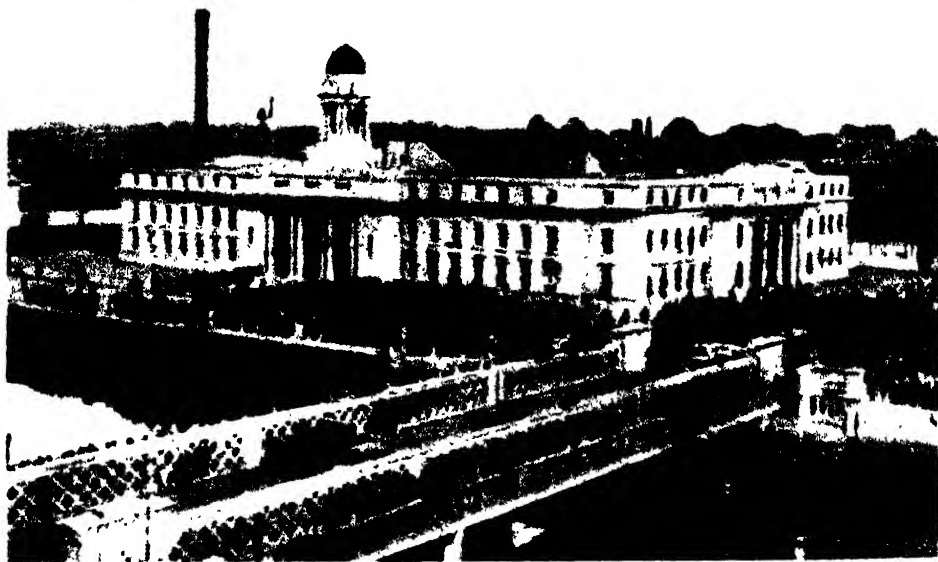
LAW. When the Irish Free State was established in the year 1922, it differed from all the other Dominions in one important respect: it had a formal written Constitution on the model of the Continental States. By Article 73 of the Constitution, it was enacted that the statute law and common law previously in force were to continue to be of full force except in so far as they were inconsistent with the Constitution.

In fact, the bulk of the ordinary criminal law and civil law, as it affected the citizens at large, was not altered by the Constitution. Apart from the clauses dealing with the new Legislature and the Executive, the Constitution simply defined certain fundamental rights, such as the freedom of speech, freedom

of assembly, freedom of religion, and the right to trial by jury, all of which were already part of the existing statute law or common law.

A far-reaching change was made in regard to the language used in the Courts. In furtherance of the national policy for the revival of Irish as the spoken language of the country, the Constitution declared Irish to be the national language, and placed it on a footing of equality with English for all official purposes, although at that time only

After a transitional period of two years, during which the judicial system inherited from the British *régime* was still, for the most part, in operation, the Irish Free State, in the year 1924, introduced some important changes. A new hierarchy of Courts was set up. The most noteworthy feature of the new arrangement was the elimination of the unpaid and untrained justices. The centuries-old Justice of the Peace disappeared. No man now adjudicates, even in the smallest matters, who is not a paid, pro-



NEW CITY HALL, CORK

Photo: Irish Independent

a small proportion of the populace knew Irish. This policy has been carried a step further by the practice of enacting all laws both in English and in Irish, and by requiring all future solicitors and barristers, under an Act passed in the year 1929, to pass an examination testing their ability to conduct proceedings in the Irish language.

The Constitution also affected the judicial system in one other important respect. The High Court was given express powers to adjudicate on the validity of any Act passed by the Legislature, having regard to the terms of the Constitution. These powers of the High Court have been but rarely invoked; and only once during the first fourteen years of the existence of the Irish Free State did the Court decide that an Act which had been placed on the Statute Book was unconstitutional and void as not complying with the requirements of the Constitution.

fessional lawyer appointed to the Bench with security of tenure.

There are four storeys in the judicial edifice. At the bottom are the District Justices. There are some thirty-five of these, all either barristers or solicitors, whole-time judges paid £1000 a year, with a few who adjudicate in the cities paid on a somewhat higher scale. Each District Justice has his own area, where he sits *solus* and adjudicates on all matters, civil and criminal, within certain limits. In cases of debt, contract, and the like, the District Justices have jurisdiction limited to claims not exceeding £25; in torts they have jurisdiction only to £10, and no jurisdiction in libel, slander, false imprisonment, and a few others; in criminal cases they have jurisdiction in most of the more common offences, such as larceny, assault, burglary, and so forth, the highest penalty they can impose being six months'

imprisonment. Whether in criminal cases or in civil cases, they sit without a jury. In the major criminal cases, such as murder and manslaughter, the District Justices take the preliminary depositions, and decide whether or not a *prima facie* case has been established justifying the return of the prisoner for trial before a higher judge and a jury.

The next Court is the Circuit Court, corresponding, roughly, to the County Court in England. It is manned by ten judges, all of whom must have had at least ten years' practice at the Bar before appointment; their salaries are £1700 each. Each Circuit Judge has his own area. He has jurisdiction in cases of contract up to £300 and in probate, equity and administration suits where the value of the assets does not exceed £1000, and in questions affecting title to land if the poor law valuation of the property involved is not over £60. With the exceptions of murder, attempted murder, conspiracy to murder, high treason, and treason-felony, he has jurisdiction in all criminal cases; but in every criminal trial there must be a jury. In civil cases, trial by jury is not common in the Circuit Court, except in cases of tort. In addition to his original jurisdiction outlined above, the Circuit Judge hears appeals from the decision of the District Justices in his area in all cases, both civil and criminal.

Above the Circuit Court in the hierarchy is the High Court. This consists of the President of the High Court, whose salary is £3000 a year, and five other judges, each of whom receives £2500 a year. The High Court has unlimited original jurisdiction. In addition to hearing civil cases in the High Courts, in Dublin, the judges go on circuit twice a year to the principal towns to hear appeals from the circuit judges. They also preside in turn over the Central Criminal Court in Dublin, where all of the major criminal charges—murder and the other crimes excluded from the circuit judges' jurisdiction—are tried for the whole State.

At the top of the ladder is the Supreme Courts. It consists of the Chief Justice, whose salary is £4000 a year, and four ordinary judges of the Supreme Court, each with a salary of £3000 a year. The President of the High Court is also *ex-officio* a member of the Supreme Court. This Court is purely an appellate tribunal. It hears appeals from the High Court and is the final Court of Appeal in the land, the right of appeal from its decisions to the Judicial Committee of the Privy Council in London having been abolished in the year 1933. Although there are, as stated, six members of the Supreme Court, three of the number constitute a Court for any particular case.

Mention must also be made of the Court of Criminal Appeal. This corresponds almost exactly with the Court of the same name in England. It is an *ad hoc* tribunal, and consists of three judges of the High Court or Supreme Court (the Chief Justice being usually the presiding judge), who hear all appeals against convictions or sentences from persons who have been convicted by a jury. In exceptional circumstances, a further appeal lies from the Court of Criminal Appeal to the Supreme Court.

A few further general remarks may be added to this brief outline. All prosecutions in the Irish Free State are in the name of the Attorney-General, and not of the King. Writs are issued in the name of the Chief Justice, not in the name of the King. The general rule, subject to a number of exceptions, is that only one appeal lies. Litigation is cheap, expeditious, and efficient, and through many political upheavals a breath of suspicion has never fallen upon the probity of the judiciary, high or low.

LEINSTER. See article, Vol. V.

LEVER, CHARLES. See article, Vol. V.

LIMERICK. See article, Vol. V.

LITERATURE (IN ENGLISH). See IRISH LITERATURE, Vol. IV.

LITERATURE (IN GAELIC). Irish nationality may be said to be the creation of two forces: the Catholic Church and the literary tradition enshrined in the Irish language. The latter is almost the more ancient of the two, for the earliest known Irish literature, written down from the eighth century onward, reflects the manners and social conditions of the period contemporary with the origins of Christianity, and there is a close connection between Irish literature and what we can learn of that of ancient Gaul. The link between them is the order of poets: the Irish *file* was a Christianized Druid, and the craft of poetry in Ireland remained, right down till the seventeenth century, what it had been among the Gauls: an aristocratic, hereditary profession, devoted to three main objects—praise, satire, and religion.

Written Irish literature owes its beginnings to the Church and the inspiration of Latin. The pagan druids had a tabu on writing and used it only for magical purposes. But the conversion of Ireland in the fifth century, and the rapid spread of monasteries in the sixth and seventh—a movement which probably originated in Wales and brought with it Latin learning—soon caused the native learned order to commit its traditions to writing. Ireland has the distinction of having produced the earliest European vernacular written literature, which later inspired similar movements in Wales, Saxon England, and the Germanic

lands. The oldest Irish writings, apart from glosses in Irish on religious texts in Latin, are the collections of laws, which date from the eighth century, and whose full understanding will throw much light on pre-Roman European society. Next in order of antiquity come the great prose epics. Of these, many separate recensions exist, dating from the ninth to the thirteenth century, and even later. The most famous is the *Táin Bó Cuailnge*, which tells of the hero Cú Chulainn and his exploits. Almost equally celebrated is the *Exile of the Children of Uisnech*, which is concerned with the tragedy of Déirdre. Up to the tenth century the process of composing these tales went on, providing medieval Ireland with an heroic cycle which in scope and content resembled the cyclic epic of the Greeks.

Side by side with this aristocratic prose epic went another cycle of more popular tradition, which has remained productive of new literature almost till to-day. This is the Fenian cycle, devoted to the legendary militia, the *Fiana*, with its great captain, Fionn Mac Cumhaill (now pronounced *Mac Cool*), his son Oisín, his rival Goll Mac Mórna, and their peers. In this popular cycle once more the epic and the tragic are combined, for part of it is the immortal love-story of Diarmaid and Gráinne. At a later date much of the Fenian cycle was cast in the form of poetic narrative and dialogue, and it is still possible, in Irish-speaking areas, to find men who can recite quantities of Fenian prose and poetry from memory. It was from Scottish tradition of the same kind that Macpherson took his Ossian. Round this popular native literature there gathered, in medieval and modern Ireland, the immense mass of folk-tale and folk-song in which the country is still among the world's richest.

During the confused period from 1200-1600, while the monastic schools declined, the hereditary order of poets flourished exceedingly, and it is from this period that we get the great corpus of so-called "Bardic" poetry, personal and aristocratic, which almost flowered into a kind of Court literature under Renaissance influence. Its last representatives were the great poets of the seventeenth century, like Piers Ferriter and 'O Bruadair. In the same century were produced the *Annals of the Four Masters* and Keating's great *History of Ireland*. Irish poetry continued to flourish in a popular form till about 1750 as an adjunct to the Stuart cause, but thereafter little remained except the ballad. The last poets of importance were Raftery and 'O Longáin (d. 1837). Since the revival of Irish, which began in 1893, the most hopeful literary work has

been that of Canon O'Leary (notably his *Autobiography*) and accounts of their own lives by three West Munster writers, O'Crohan, O'Sullivan, and "Peig Sayers."

LONGFORD. See article, Vol. V.

LOVER, SAMUEL. See article, Vol. V.

MCCORMACK, COUNT. See article, Vol. V.

MACDERMOT, FRANK (born 1886). Youngest son of the late Rt. Hon. The MacDermot, Prince of Coolavin. He was educated at Downside and Oxford, and called to the English Bar in 1911. He was an active supporter of the old Irish Parliamentary Party and a member of the then national organization, the United Irish League. He was elected a Member of the Dail for Roscommon in 1932; became leader of the Farmers' Party, which later amalgamated with the Cosgrave Party, of which he became Deputy-Leader in the Dail. Subsequently he resigned from the Opposition and now sits as an Independent Deputy. He was closely associated with Mr. Erskine Childers, from 1911 to 1913, in promoting the cause of Irish Fiscal Autonomy. He served in the British Army in France and Belgium from 1914 to 1918, held the rank of Major, and was four times mentioned in dispatches. After the World War he joined the firm of Heath & Co., bankers, New York, retiring in 1927. He contested West Belfast as an official nationalist candidate for the Northern Ireland Parliament in 1929, but was defeated.

MAGENNIS, WILLIAM (born 1869). Born in Belfast, he was educated at Belvedere College, and University College, Dublin. He is Fellow, Royal University of Ireland, barrister-at-law; professor of metaphysics, University College, Dublin; member of the Governing Body of University College, and member of the Senate of the National University of Ireland, member of King's Inns, Dublin, 1893. He was elected to represent the National University in the Dail in 1922, but was defeated in the 1927 General Election. Originally a member of the Cosgrave Party, he founded and became leader of a small group, which broke up after his defeat in 1927. Among his published works are *Irish Democracy*; Editions of English Classics; Lectures on Poetry and Criticism, Ethics, Art, etc.

MAHON, GENERAL, THE RT. HON. SIR THOMAS BRYAN (1862-1930). He was born at Belleville, Co. Galway. He was a member of the Free State Senate, 1922-30. In the British Army he had a distinguished career, and on the outbreak of the World War became G.O.C. 10th (Irish) Division; he was in command of Salonika army, 1915-16, and from 1916-18 was Commander-in-Chief of the British troops in Ireland.

MacKEON, MAJOR-GENERAL SEAN, known as "the Blacksmith of Ballinalee" (born 1894). After General Michael Collins, the most distinguished and romantic figure of the troubled times in Ireland. Elected Member of the British Parliament (but did not take his seat), 1918-21; Member of the Dail, 1922, he resigned in August, 1923, and became Major-General and Chief of Staff of the Free State Army. Was sentenced to death by a British court martial in 1921, but on protest from the then Dail Cabinet, during the Anglo-Irish negotiations, was released. Seconded the motion in the Dail, December, 1921, for the approval of the Anglo-Irish Treaty, which was moved by Arthur Griffith and carried by a majority on the 7th January following. Elected Member of the Dail for Leitrim-Sligo, June, 1929, and for Longford-Westmeath at the General Election of 1932-33.

MANGAN, JAMES CLARENCE (1803-49). Poet. He was born in Fishamble Street, Dublin. His father, James Mangan, a school teacher of Shanagolden, Co. Limerick, later became a grocer in Dublin, but as he failed in business, young Clarence got employment in a scrivener's office and, for a time, was the sole support of the family. He was educated in Saul's Court, off Fishamble Street, founded in 1760 by the distinguished Jesuit, Father John Austin; was a contributor to *The Comet*, *The Dublin Penny Journal*, *The University Magazine*, and later to *The Nation*. He wrote over 800 poems, a quarter of which were original. His most widely known poem is "Dark Rosaleen," first published in *The Nation*.

MARKIEWIECZ, COUNTESS CONSTANCE GORE-BOOTH (1868-1927). A daughter of Sir Henry Gore-Booth, Bart., of Lissadell, Co. Sligo, she was a major in the Irish Citizen Army and, in the 1916 Rising, commanded the insurgents, who took possession of the Royal College of Surgeons, St. Stephen's Green. She was sentenced to death, but the sentence was commuted to penal servitude for life. She was released in the amnesty of 1917. She was the wife of a Russian-Polish artist. During the British General Election of 1918 she was returned for the St. Patrick's Division of Dublin, being the first woman ever elected to the House of Commons. In accordance with Sinn Fein policy she never took her seat.

MARTYN, EDWARD (1859-1924). He was born in Masonbrook, Co. Galway, and was educated at Belvedere College (Dublin), Beaumont (Windsor), and Christ's Church, Oxford. He was one of the original promoters of the Irish Dramatic Movement in 1899, and in 1903 founded, maintained, and endowed the Palestrina Choir, for men and

boys, in the pro-Cathedral, Dublin, for the reform of liturgical music, and which became, in the same year, the *Schola Cantorum* of the Archdiocese. He organized a reform of Church architecture, stained glass, etc. He was President of the Sinn Fein organization from 1904 to 1908, when he resigned; founded the Irish Theatre in Dublin in 1914; was an active promoter of the Gaelic League, and was a Governor of Galway College of the National University. A dramatist, he wrote numerous plays which were produced at the Abbey Theatre from time to time.

MOORE, COLONEL MAURICE GEORGE (born 1854). Born at Moore Hall, Ballyglass, Co. Mayo, he was a son of the late George Henry Moore, D.L., M.P., and brother of the late George Moore, the famous novelist. Educated at St. Mary's College, Oscott, near Birmingham, and Sandhurst, he afterwards served with distinction in the British Army. He was a member of the Provisional Committee, and Inspector-General of the Irish Volunteers and Irish National Volunteers, 1914-17, and was in command on the occasion, in 1914, of the largest parade of Volunteers ever held in Dublin, when John Redmond, M.P., took the salute. He was Special Envoy from Dail Eireann to South Africa, 1921; Irish Envoy to France, 1922; Chairman of Dail Committee on Resources of Ireland, 1919-22, a Member of the Free State Senate from 1922 to the time of its dissolution in 1936.

MOORE, THOMAS. See article, Vol. VI

MULLINGAR. See article, Vol. VI.

MUNSTER. See article, Vol. VI.

MUSIC.

Sweetly sounds the Vesper bell,
Awakening trembling echo spell
From sleepy hollow of the dark'ning dell.

The bell, tolled, ceases. The solemn tone of organ softly rolls its mighty toll of thanksgiving and prayer, leading voices of a choir well tuned—devoted to a life of Psalmody. As in beauty, so in harmony resounds the swell, in unity of everlasting praise, with music worthy of a noble purpose.

From cathedral and abbey throughout this land of ours, the daily service of Evensong, Vespers, and other portions of the liturgical and canonical hours is, and has been through the ages, the daily solace of our people.



COLONEL MOORE
Photo. Photopress

The music in many of these choirs in cathedrals and amongst the established Orders is very beautiful in form and exposition.

Fine organs are in most churches, fine players in many; the instruments are mostly imported, though there is at least one builder—a Cork city firm—whose work will bear critical examination and comparison with the best of foreign make.



"FEIS" IN CO. CAVAN

At Feiseanna there are contests in all forms of music and sport.

Photo: Irish Tourist Association

For the more secular performance of great music, we have few societies whose love for music is sufficiently lasting in the amateur to sustain the necessary effort in combination, to bring to fruition of worthy presentation *much* of the work of the classic period, the ever-living vigour, the ever-living era of the master minds of composition in oratorio and symphony; and so, here in Ireland, we have to be content with an occasional performance of the more popular "Messiah," "Elijah," "Dream of Gerontius," or "Creation."

They, however, are so finely performed when given as to emphasize the wealth and glory of regions unexplored, and of what might be accomplished by a more sustained effort. Musicians of capacity are abundant to supply the orchestral work.

Sadly, a great number of them—the professional element—have to seek a living abroad, where they are entirely successful.

Of orchestral societies, we have one or two, very good, very earnest, very capable, unappreciated, and therefore struggling.

Of outstanding vocalists—well, we have given a Foli, Ludwig, a McGuckin, McCormack, Margaret Dempsey, Maggie Sheridan, and many another that my space does not permit me to mention.

Composers innumerable from Scott, Lyons, Carolan, Osborne, on through Field and

Balfe to Stanford, Harty, Norman O'Neil, Charles Wood, even to Arthur Sullivan—though born in London, his father was from Co. Cork.

Our music, passing through a long period of decadence, is still a living force, and shows great power in revival.

Music in Ireland knows no boundary. "God Save the King" is a good tune: it was made by an Irishman, Henry Carey, in America, so also is "Liliburlero" a good tune. Each, like many another thing of commendable and virtuous origin, drifting into bad company, set its votaries into raging discord, when lo! the one eventually settles down into reputable dignity as a National Anthem, the other enshrines itself in classic form of sonata at the hands of the magician Mozart, a life-long friend of Michael Kelly, a Dublin man.

A German—no doubt a fine musician—commands our Army bands, who play upon poor-toned German instruments at a low pitch—a pitch totally unsuited to open-air work in this damp climate.

Ireland has given bandmasters and bandmen to the armies of Europe and to America for many generations, and must we now, whilst honouring strangers, still despise our own?

Our Garda (Police) bands retain the old military pitch and play upon instruments of fine quality. Several of our younger men of commissioned rank in the Army, qualifying



DANCING TO THE IRISH PIPES

Photo: Irish Tourist Association

for bandmastership, have taken the Degree Mus.B. in the National University.

Civilian band activities have a long and worthy tradition to uphold in Ireland; they are, in truth, an integral part of the life of our people. One, at Graigueanamanagh, was founded in the first decade of the nineteenth century, and has but lately ceased to function on the death of its most devoted president, the learned archaeologist and musician.

p. O'Leary. Another, the celebrated St. James's Band, Dublin, was established in 1800, and is at present flourishing.

Of the music now popular I must mention a weird un-Irish combination of instruments called a "Ceilidhe Band," in jig and reel, more calculated to appeal to the light-footed polishing of floors than to the higher fellowship of a mind regenerated.

For the rest, the music of the people is that remnant—which may be remembered as tune—of the once great minstrelsy of the harp. It might be said that, to many a thoughtful Irishman, the music of the Gael is the most ancient and most beautiful of music, and that his sole other musical conviction is that modern musicianship, applied to develop its latent beauty, would destroy its most cherished graces. The past few years have gone very near to prove that though this idea may be a very noble, a pleasurable and, in a way, a patriotic sentiment, it is an unpractical and entirely unprogressive one; it is falsified by much that takes place whenever a "traditional" performer appears upon the stage.

By the work of the past few years, much that was obscure has been placed in a clearer light, the true ring of originality rediscovered and recognized in the peasant performer. That the talent, as well as the love, for music is allied to that of invention has been proved by demonstration at the Oireachtas and Feiseanna throughout the country. Full of resource, the peasant performer is seldom at a loss for a graceful turn or phrase to fit the passing sentiment. He has the genius, he *wants* the art, he has in a measure *lost* the tradition.

In music we are a vigorous, undaunted nation, possibly still in a ferment, from which may be distilled the spirit, the nectar, and solace of a new progressive Art of Music in Ireland.

NATURAL RESOURCES. The Irish Free State covers an area of 27,137 sq. miles, or 17,367,581 acres, and, of this, 17,024,481 acres represent the actual land surface. Roughly speaking, three-fourths of the land surface can be economically exploited for agricultural purposes.

The scarcity of minerals, especially the more useful ones—coal and iron—the mildness of the climate, the richness of the lowlands generally, the luxuriance of the pastures, and the convenience of the British market have all contributed to make agriculture the dominant interest in the national economy.

Agriculture. Activity in this field may be classed under three main heads: live-stock raising, food cropping, and cropping for industrial purposes. From a commercial

point of view, stock raising is the most valuable agricultural asset, as the following figures taken from recent returns will show—

VALUE OF STOCK AND LIVEL STOCK PRODUCTS	
Total Production	Exports and Additions to Stock
£54,614,060	£31,258,000
VALUE OF CROPS	
Total Production	Exported
£47,882,000	£766,000

In the live-stock category the most important items are, in the order of their



GATHERING CARRAGEEN MOSS IN CONNEMARA

This sea-weed is very nutritious and is used as a basis for soups.

Photo High Commissioner for the I.F.S.

values: cattle, butter, pigs, eggs, milk, sheep, and poultry. Cattle, pigs, butter, and eggs figure most prominently on the export list, accounting in value for practically four-fifths of the total.

The disproportion between output and exports in regard to crops, raises an important point in regard to the national economy and one that needs some explanation. A cursory examination of the export list would lead one to believe that in the production of national wealth the live-stock industry plays the most important role. A reference to the manner of disposal of the crops as revealed by official returns will, however, result in a considerable modification of this view, the disproportion between output and export being explained by the fact that practically the entire crop production is needed for home consumption. Crop output is, in fact, almost entirely governed by the home demand, as the market for such produce in Britain, or elsewhere abroad, is practically negligible. The interdependence of the cropping and live-stock industries may be grasped from the fact that approximately two-thirds of the total crop output is applied to the feeding of live stock. From this point of view, as well as from the equally important

one of catering for the home population, one can safely say that the machinery of the national economy to a great extent hinges on cropping.

A development that is likely to exercise an important influence in regard to crop pro-



BALLYCOTTON, CO. CORK

Ballycotton Bay is perhaps the finest sea angling ground in Europe.

Photo Irish Independent

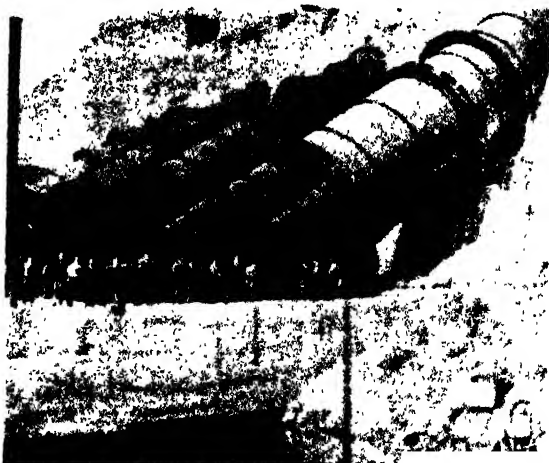
duction in the near future is the encouragement given by the State to the growing of wheat. The ultimate aim of this policy is to make the country independent of foreign supplies of the grain; and already considerable progress has been made in this direction, as evidenced by the fact that production has increased from 634,000 cwt. in 1929 to 2,038,000 cwt in 1934.

The chief crops produced are, in the order of their values, potatoes, cabbage, oats, barley, fruit, beet, and hay.

Cropping for industrial purposes is, to a certain extent, a new development in Free State agriculture. The production of barley for brewing and distilling is, of course, an activity in this field of long standing, but with the introduction of the beet sugar industry and the manufacture of what is known as industrial alcohol, a new stimulus has been given to enterprise in this direction. Encouraged by State subsidies and favoured by suitable soil and labour conditions, the cropping of beet has now reached formidable proportions, the annual production being presently in the neighbourhood of 500,000 tons. This will be increased to meet domestic needs—estimated at 700,000 tons annually—as soon as the factory organization for handling the crop is completed.

Although the potato is the Free State's most valuable food crop, it has not yet been exploited to any great extent for industrial purposes. The manufacture of industrial alcohol—a product widely used as a blend in motor spirit and in a number of modern industries—is one of the uses to which a surplus of the crop can be put. The Government, with a view to encouraging an extension of tillage in this direction, has taken a monopoly of the industrial alcohol industry and erected a number of factories in various parts of the country to cater for local production. It is estimated that up to 250,000 tons of the industrial tuber could be economically used up in the alcohol industry. The Government scheme, if a success, would mean, apart from industrial considerations, the creation of a valuable emergency food reserve in these islands.

Forestry. The timber resources of the Irish Free State are not great. Although a very considerable fraction of the so-called waste land of the country is eminently suited for forestry development, only 250,000 acres are under plantations. As has been the case generally



SHANNON ELECTRICITY SCHEME

The turbines give a total output of 136,400 h p., but this can be increased if necessary.

Photo: Fox

throughout the British Islands, afforestation, until the World War emphasized the need for a reserve of home-grown timber, was sadly neglected. The problem is, however, now being seriously tackled by the State, which in recent years has acquired



PEAT PRODUCTION

About 6,000,000 tons of peat are used annually as fuel, principally on farms and in small towns. 1 and 2. The application of mechanized methods to peat production. This has resulted in greater and cheaper production on the large bogs. 3 and 5. Cutting peat with the "slane," the most useful tool on the small bogs and in hilly country. 4. Bringing home the peat. The donkey with loaded panniers is a common sight in many parts.

Photos: March of Time; Topical

some 80,000 acres for forestry operations, over 50,000 of which are now planted.

Water Power. The water-power resources of the Irish Free State are considerable. Owing to the lack of domestic supplies of coal, attention has been concentrated on this source of power since a native government set about developing national resources. A wartime Water Power Committee estimated that there was available in Ireland some 500,000 continuous horsepower equivalent to about 7,000,000 tons of coal per annum. This estimate included power from Northern Ireland rivers and the smaller southern ones. The three main sources, however, were the Shannon, the Erne, and the Liffey, all of which are in the Irish Free State. The Shannon has since been developed, and now, from the great generating station near Limerick, supplies power and light to practically every corner of the country. At present, four turbines, of an output of 38,600 h.p. each, operate the station; this represents only two-thirds its total capacity. A huge conservation scheme is also underway in Co. Wicklow, with a view to harnessing the Liffey and providing further supplies of electricity for power and lighting convenient to the capital.

Peat. Another potential source of power is peat. It is estimated that about 6,000,000 tons of peat are used annually as fuel, principally on the farms and in the small towns. Efforts are being made, presently, under State auspices, to apply mechanical methods to peat saving, with a view to greater and cheaper production. There are approximately 2,500,000 acres of bog in the country capable of giving some 4,000,000,000 tons of air-dry turf, equivalent in calorific value to about 2,000,000,000 tons of coal.

Minerals. Although minerals are to be found in great variety in the Irish Free State, they are not exploited to any great extent. The more useful ones, coal and iron, are sparsely distributed. Only in two areas can coal be worked economically, and in these areas the mines cater mostly for local needs. These are the Castlecomer and Arigna fields, situated in Cos. Kilkenny and Leitrim respectively. The total output averages only some 100,000 tons annually.

According to the report of the Coal Inquiry Commission, the coal resources of the Irish Free State are as follows—

	Tons
Arigna Coalfield	8,544,000
Leinster Coalfield	79,443,000
Tipperary Coalfield	14,842,000
Total	102,829,000

Iron ore is plentifully distributed, but it is of poor quality and does not lend itself to economic exploitation.

Apart from coal and iron, there are, however, numerous useful minerals now mined for use in local industries or for export. These include bauxite or aluminium ore, antimony, lead, copper, gypsum, and iron pyrites.

O'BRIEN, W. SMITH. See article, Vol. VI.

O'CONNELL, DANIEL. See article, Vol. VI.

O'CONNOR, RODERICK, King of Connaught. See article, Vol. VI.

O'CONNOR, T. P. See article, Vol. VI.

O'DRISCOLL, MRS. MARGARET COLLINS. Mrs. O'Driscoll was representative for North Dublin, in the Dail, from 1923 to the General Election of 1932, when she was defeated. She is sister of the late General Michael Collins (see article, Vol. II). For a number of years, from 1923 to 1927, she was the only woman member of the Dail. Although constant in her attendance during the sittings of the House, she spoke but seldom in debate, intervening only on subjects in which she was keenly interested, such as women's rights, public health, housing of the poor and working classes, hygiene and education. She is the mother of a family of fourteen children.

OGHAM. See article, Vol. VI.

O'KELLY, SEAN T. (born 1883). Vice President of the Free State Executive Council and Minister for Local Government since 1932. Originally a journalist, Mr O'Kelly was a member of the Executive of the Gaelic League from 1909 to 1925. General Secretary of the Gaelic League, 1915-21; Foundation Member of Sinn Fein, Hon. Secretary, Sinn Fein, 1908-10. He was an associate of Arthur Griffith on the staff of various Sinn Fein journals, was elected, but did not take his seat, to the British Parliament for the College Green Division of Dublin city in the General Election of 1918, and was elected a Member of the Dail in 1921, 1923, 1927, 1932, and 1933. Speaker, Dail Eireann, 1919-21. He was the Irish Republican representative in Paris, Rome, and the United States before the Treaty. He was a Member of the Free State delegation that attended the Imperial Conference at Ottawa in 1934.

ORMONDE, DUKES OF. See article, Vol. VI.

OSTMEN. See article, Vol. VI.

O'SULLIVAN, JOHN M. (born 1881). He was born in Killarney, and studied at the National University of Ireland, and Heidelberg and Bonn Universities. Professor of Modern History, University College, Dublin. Member of the Dail for Kerry, and Minister for Education until the dissolution of the sixth Dail in 1932. Professor O'Sullivan is a very effective debater and has been one of the outstanding figures on the Front

Opposition Bench under the leadership of ex-President Cosgrave. His published works include *Old Criticism and New Pragmatism* (Dublin), 1910, and articles on Philosophy and History in various periodicals.

PARNELL, CHARLES STEWART. See article, Vol. VI.

PATRICK, SAINT. See article, Vol. VI.

PEARSE, PATRICK H. (1880-1916). One of the signatories of the Proclamation of an Irish Republic in Easter Week, 1916, at the time of the Sinn Fein rising, and Commander-in-Chief of the Irish Republican Army. He was born in Dublin of English parents; was educated at the Christian Brothers' Schools, Westland Row, Dublin, and was a graduate of the National University. He was editor of the Gaelic Journal, *An Claidheamh Soluis*, and founded and became Head Master of Saint Enda's College for boys, where he taught Mathematics through the medium of Irish. At the age of 17 he founded, and became President of the New Ireland Literary Society; was a member of the Executive of the Gaelic League, and wrote miracle plays in Gaelic for the pupils of his school, some of whom took part in the rising. He was tried by court martial for his part in the insurrection, and was executed on the 3rd May, as was, also, his younger brother William. It was Patrick Pearse who issued the general order for surrender on Saturday, 29th April, six days after the outbreak.

POYNING'S ACT. See article, Vol. VII.

REDMOND, JOHN. See article, Vol. VII.

REDMOND, WILLIAM ARCHER (1886-1932) Only son of the late John Edward Redmond, leader of the Irish Parliamentary Party in the House of Commons. He represented Waterford in the Dail from 1923 until his death. He was a barrister-at-law, and fought with the British Army in the World War, holding the rank of Captain and winning the D.S.O. He was a member of the British Parliament for Tyrone, 1910-18, and Waterford, 1918-22. For a short period in the Dail he was leader of a small party of some seven or eight Deputies who styled themselves the National League Party. Early in 1927 a Coalition which would include Fianna Fail (de Valera party), Labour, and National League, was attempted, but the project fell through. Later, Captain Redmond joined forces with the Cosgrave Party.

RELIGION. In the year 1926, the last for which figures have been published, *Saorstát Éireann*, out of a total population of 2,971,992, had 2,751,269 Catholics, and 220,723 of all other denominations. Of the latter, 164,215 belonged to the "Church of Ireland," 32,429 were Presbyterians, and

10,663 Methodists. When it is realized that the three Ulster counties of Monaghan, Cavan, and Donegal account between them for 30,285 "Church of Ireland" members and 21,263 Presbyterians, it will be seen to what an overwhelming degree the Free State is a Catholic country. That it is increasingly becoming so is shown by a comparison between 1911 and 1926. In the former year



MAYNOOTH COLLEGE

Founded in 1795, it is the chief seminary for the Irish clergy.

Photo: Irish Independent

the Catholics were 896 in every 1000 of the population, in the latter 926, whereas "other denominations" fell from 104 per 1000 to 74. Another aspect of the Free State's religious position is to be observed in the fact that "other denominations" are proportionately much more numerous in the towns than in rural areas.

Christianity was introduced to Ireland by Saint Patrick in the fifth century. During the "Dark Ages," Ireland, which had developed its own peculiar monastic system, was a great missionary country, among its saints the greatest were Colm Cille, who evangelized North Britain, and Columbanus, who was active in the Burgundian kingdom, and founded the famous monastery of Bobbio. The combination of asceticism and Latin learning in this age gave Ireland the name "island of saints and scholars." The Norse invasions and the wars that followed

them did immense damage to the Irish Church, and in the twelfth century it was reformed under the inspiration of Saint Bernard of Clairvaux. The present episcopal organization is substantially that set up by the Synod of Kells in 1152, when papal sanction was granted for the establishment of four archbishoprics (Armagh, Dublin, Cashel, and Tuam) corresponding to the four provinces, and thirty-six bishoprics corresponding to the principal sub-kingdoms. Amalgamation has now reduced the number of dioceses to twenty-four, and modern parishes no longer exactly represent the ancient ones. During the later Middle Ages there was a constant struggle between the native Irish clergy and the English, who introduced the Continental religious orders. At the Reformation, political circumstances made it impossible for Queen Elizabeth's government to enforce the same changes as in England. It was in the seventeenth century that Catholicism and the learned tradition once more combined to produce an incipient nationalism. Though deprived of all property and utterly proscribed by the penal laws, the Church maintained itself to witness a remarkable revival in the nineteenth century. The year of Emancipation (1829) was a landmark as much in political as in ecclesiastical history. Ireland was covered once more with churches, schools, and religious houses, and a powerful missionary impetus made Irishmen everywhere the agents of a Catholic renaissance throughout the English-speaking world.

Apart from a small capital endowment granted to Maynooth College out of the funds of the Disestablished Church of Ireland in 1869, the Catholic Church in Ireland depends entirely on the voluntary support of its members. Out of its resources it provides for the education and maintenance of the clergy, the building and upkeep of churches, monasteries, and convents, and at least part of the cost of secondary education; the majority of Catholic secondary schools are controlled by the clergy, receiving a State subsidy. It also carries on a very considerable foreign missionary activity. The central college for the training of the clergy is St. Patrick's College, Maynooth, governed directly by the bishops. It has about 800 students, from among whom the vast majority of the Irish clergy and episcopacy are drawn. Founded in 1795 by the younger Pitt and given an annual endowment by the State from 1795 to 1869, this college, which was originally intended to provide an alternative for the Continental training of the clergy, has stamped on the Irish Church a very marked national character and has helped enormously to give it

its secure hold over the affections of the people. The Archdiocese of Dublin has its own seminary for clerical education, and there are smaller ones in Carlow and elsewhere. In addition, the Irish colleges in Rome, Paris, Salamanca, and Louvain, founded during the seventeenth century, still continue to serve their original purpose. Ireland is one of the world's great missionary countries, and a large proportion of its clergy go to Great Britain, Australia, New Zealand, the United States, as well as in recent years to Central Africa, China, India, and even France.

The Disestablished Church of Ireland is now governed by a General Synod, consisting of the archbishops, bishops, and 216 representatives of the clergy and laity, and divided into two Houses, of which the episcopacy forms one. The representative element is elected by diocesan synods. The General Synod has an annual session, and serves as both legislative and judiciary in all Church matters. There are now only two provinces, Armagh and Dublin, the former having absorbed Tuam and the latter Cashel. In the same way, amalgamation has reduced the episcopal sees to thirteen. The revenue of the Church is mainly derived from the sum of £10,000,000 left as its endowment in 1869.

The Presbyterian Church in Ireland is administered by a General Assembly, whose seat is in Belfast. It is organized in thirty-three presbyteries, and the meetings of the General Assembly are presided over by an annually-elected Moderator. The first Irish Presbytery was formed at Carrickfergus in 1642, and the present organization dates from 1840, when several autonomous bodies were united in one General Assembly. The Methodist Church is governed by an annual conference, presided over by the President of the British Conference. It dates from John Wesley's visit to Ireland in 1747. The Society of Friends has existed in Ireland since 1653, and the Plymouth Brethren since their origin. The Free State has a total of 3686 Jews, mostly recent arrivals from eastern Europe.

RODERICK OF CONNAUGHT. See article, Vol. VII.

ROSCOMMON. See article, Vol. VII.

ROUND TOWERS. See article, Vol. VII.

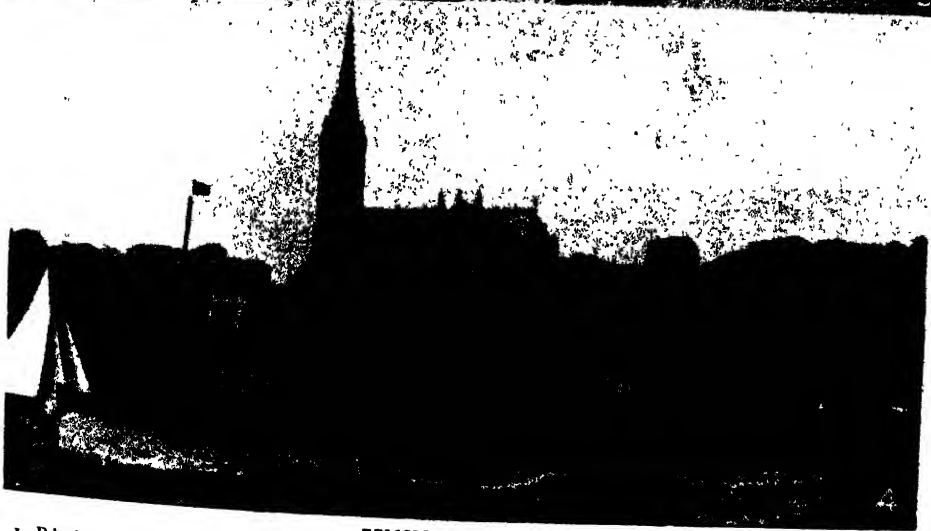
SHAMROCK. See article, Vol. VII.

SHANNON, RIVER. See CONNAUGHT, Vol. II.

SHAW, GEORGE BERNARD. See article, Vol. VII.

SHERIDAN, RICHARD BRINSLEY. See article, Vol. VII.

SIGERSON, GEORGE, F.L.S., M.D., M.Ch. (died 1925). Professor of Biology, Catholic



RELIGION IN IRELAND

1. Pilgrims on Croagh Patrick, Co. Mayo. On the last Sunday in July they climb this mountain, dedicated to St. Patrick. 2. A new church at Shankill, Co. Dublin. 3. The Cathedral Church of St. Patrick, Dublin (Church of Ireland). The first foundation was in 1191, but the present building is mainly Early English Gothic, with a fourteenth-century tower and an incongruous steeple, which was added in the sixteenth century. It was of this cathedral that Swift was Dean. 4. The imposing Cathedral at Cobh, overlooking Cork Harbour, with a spire 300 ft. high and a carillon of forty-two bells. It is of modern construction.

Photos: Irish Independent; Irish Tourist Association

University College, Dublin. He was a Senator of the National University of Ireland, and a Member of the Irish Free State Senate, 1922-25. Dr. Sigerson was a nerve specialist of very wide reputation. In politics he was a strong Nationalist, and was associated with every popular movement from the early days of the Land League and Parnell's leadership to the establishment of the Free State. He was steeped in ancient Irish tradition, folklore, history, and archaeology. He was educated at Queen's College, Cork, Dublin, and Paris. His published works include *Microscopical Researches on the Atmosphere*, *Cause of Buoyancy of Bodies of Greater Density than Water*, *Changes in the Physical Geography of Ireland*, and *Modern Ireland*.

SINN FEIN. See article, Vol. VIII.

SLIEVE AUGHTY, Mts. See MUNSTER, Vol. VI.

SLIGO. See article, Vol. VIII.

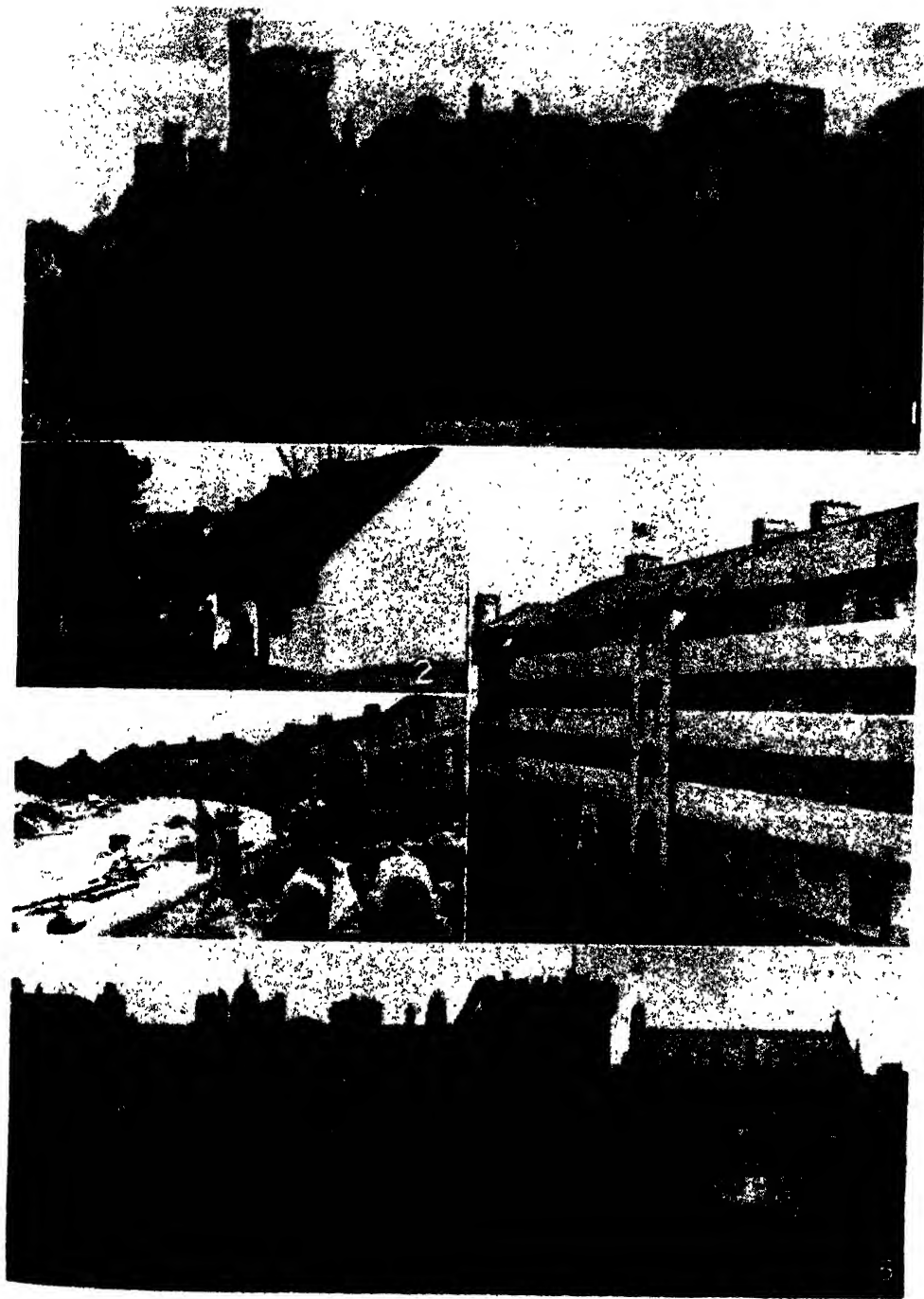
SOCIAL AND POLITICAL ORGANIZATION. The population of the Irish Free State, as revealed by the Census of 1936, is 2,965,854, a decrease of 6138 as compared with that of 1926. This decrease, strangely enough, is confined to the female population, for the males increased in the same period from 1,506,889 to 1,518,807. In the proportion of females to males, which is 953 per 1000, the Free State is lower than twenty-two European countries and four others in which male emigration tends to keep the ratio low. As is well known, Ireland as a whole has for the past ninety or so years lost very heavily in population, which in 1841 was 8,196,597, and by 1911 had sunk to 4,390,219. The chief cause of this loss was emigration; thus from 1891 to 1900 the total emigration figure was 433,526 for

all Ireland, and from 1900-10 it was 346,024. From 1916-26 it was 270,020 for the Free State alone, and in the last decennial period 169,316. This recent fall was due mainly to restrictions on immigration into the U.S.A. It is calculated that there are in non-European countries 1,290,690 persons born in Ireland; in Great Britain there are 502,767. The U.S.A. alone has 4,136,395 persons, one or both of whose parents were born in Ireland, and Canada has 1,107,817. Thus it may safely be said that the great majority of the Irish race is outside Ireland. As in other countries, there has recently been observed a considerable internal migration from country to town in the Free State. Thus the cities of Dublin, Cork, Limerick, and Waterford all show increases in population, while that of the whole Free State has fallen. Dublin, for example, has gone up since 1926 from 404,078 to 467,691.

The urban population of the Free State now amounts to about one-third of the total, as compared with less than one-sixth a century ago. Of persons gainfully occupied in 1926, 51.4 per cent were engaged in agriculture, and only 14.9 in manufactures and skilled trades. Agriculture is thus the preponderating occupation in the Free State, and is likely long to remain so. When it is remembered that out of 378,157 agricultural holdings in 1933, 297,913 were returned as containing less than 50 acres, another vital feature of the country's life stands revealed. Ireland is to an overwhelming degree a land of small-holders, whose fathers and grandfathers were tenants-at-will. It is only to be expected that this fact and the stormy history that underlies it should be strongly reflected in the national character. The typical Irishman is the peasant or peasant's



A DETACHMENT OF THE CIVIC GUARD ON PARADE
The Civic Guard, 7500 strong, is the Police Force of the I.F.S.
Photo: March of Time



CASTLES AND COTTAGES IN IRELAND

1. Lismore Castle, since 1753 the Irish residence of the Dukes of Devonshire. It stands on a precipitous cliff overhanging the Blackwater River in Co. Waterford. Built in 1185 by King John, in 1587 it became the home of Sir Walter Raleigh.
2. Cottages in the Claddagh Village, Galway. On this site from time immemorial the Galway fishermen have built their homes.
- 3 and 4. Modern working-class houses and flats: 10,800 houses were built under Government housing schemes from 1932-1935.
5. Dublin Castle, for centuries the official residence of the Viceroy. The Birmingham Tower is the only part of the original thirteenth-century castle still remaining.

Irish Tourist Association; March of Time; Topical

son; he has the tenacity of his type and race, and the thriftiness of the independent smallholder is slowly gaining over the recklessness and improvidence induced by precarious centuries.

Like every other country, Ireland contains many racial elements. Yet it may be said to have evolved a distinct physical type, characterized by the combination, less usual elsewhere, of dark hair with blue eyes.

With the coming of Christianity, the formation of a unified national culture, almost amounting to race-consciousness, received a powerful impetus; and by the time of the long Scandinavian Wars in the ninth and tenth centuries, this culture was so strong and attractive, that it absorbed first Norsemen, then Normans, and finally Englishmen, and in a sadly attenuated form was still powerful enough to shape the Irish nation in the nineteenth century. It is necessary to emphasize this culture because it has been more powerful than race in Ireland, and indeed what is called the Irish race is its product.

The Norse invasions gave Ireland its first towns and a notable accretion of Nordic blood. Dublin was a Norse city for two centuries, and some of its famous families have still Norse names. The Normans brought with them great numbers of Flemings and Welshmen, whose descendants in Wexford, the Midlands, and remote Mayo can still be identified. During the medieval

period there was a constant influx from England, which left its traces everywhere, but most deeply in the region of the Pale round Dublin, in the Ormond territory at Kilkenny, and in the city of Galway. The sixteenth and seventeenth centuries saw the plantations of Leix, Offaly, and Derry, the

powerful immigration from West Scotland into Antrim and Down, and finally the Cromwellian upheaval. This last, however, had only a slight effect on the general population, and the same may be said of the new landlord class which came in during the eighteenth century or after the Encumbered Estates Act of 1849. The dominant element is still everywhere the "old inhabitants of the island," of whom Lord Clare spoke in his appeal for the Act of Union. The ruin of the seventeenth and eighteenth centuries, which reduced the old nobility, where it remained, to peasant status, helped also to create the homogeneous modern nation. In the Free State there

are few social distinctions, and titles of honour cannot be awarded except by special legislation; the temper of the people is extremely democratic, seeming in this respect to have altered greatly even in two generations.

For purposes of local government, outside the cities and towns which have their own corporations and urban district councils, the unit is now the county. The multiplicity of boards of guardians and rural district



IRISH TYPES

1. One of the last of the Cork ballad singers. For centuries they have been familiar figures in the county. 2. Country woman with yule log of bog-oak. She is wearing the Cork cloak. 3. Islanders of Inishmore who have to toil ceaselessly to wrest a livelihood from the infertile soil and the perilous Atlantic Ocean.

Photos. Fox; Irish Independent

councils which existed under the Union have been abolished. Home assistance has taken the place of the workhouse and has become the normal method of poor relief. The county councils administer this and other services, such as housing, health, and sanitation, through committees of their members known

as boards of health. Many of these boards have appointed county medical officers of health to assist them and to organize their services. There is an elaborate organization for maternity care and child welfare, thanks to which the rate of maternal mortality has been brought down to the record low figure of 4.1 per 1000. All National Health Insurance is now supervised by a central government commission. Pensions for widows and orphans and for the blind have been recently introduced. Very great efforts are being made to deal with the housing shortage, which in the Free State as elsewhere is a legacy of the World War. During the first

eleven months of 1936 there were 13,118 houses built and reconstructed, and over £3,000,000 made available for housing by the State.

In addition to the twenty-seven county council areas (Tipperary forming two), the Free State contains four county boroughs—Dublin, Cork, Limerick, and Waterford—of which the first three are governed by city managers, assisted by councils; and five boroughs—Clonmel, Drogheda, Kilkenny, Sligo, and Dun Laoghaire—of which the last

is administered similarly. It is the only new borough; the rest represent the effects of the Municipal Reform Act of 1840, which abolished ancient municipalities all over Ireland. Besides the boroughs there are fifty-five towns governed by urban district councils, and twenty-three under Town

Commissioners, with limited powers to levy rates. Municipal boroughs and urban districts enjoy considerable autonomy, administering the Acts relating to public health, housing, libraries, maternity, and child welfare. Since 1924 a certain number have had their elected councils abolished by the Minister for Local Government and have been given managers.

The Constitution of the Irish Free State was originally similar to that of the Dominions. Under the London Treaty of 1921, *Saorstát Éireann* was to have the same status in "the community of nations known as the British Commonwealth" as that enjoyed by Canada. The Constitution, enacted in 1922, has been amended

twenty-five times. Two amending Acts of 1936 have abolished the Senate, thus constituting a form of single-Chamber government, and deprived the Governor-General of all functions concerning the internal affairs of the Free State. For the time being these Acts give complete power to the Executive Council and the Chamber of Deputies (*Dail Éireann*), but further legislation is promised which will set up a new Second Chamber on vocational lines and establish a head of the State who



IRISH HOSPITALS

Thanks in part to the sweepstakes, the Irish Hospitals are up to date and well appointed.

Photo: March of Time



DUN LAOGHAIRE CANINE SOCIETY DOG SHOW

Photo: Irish Independent

is apparently to be directly elected by the people. A Revision of Constituencies Act, also passed in 1936, has reduced the number of Deputies from 153 to 138. The system of election in use is proportional representation by means of the single transferable vote.

It is interesting to note that the experience of the Free State with regard to this system has been the exact contrary to what

of the Labour Party, the independence is more apparent than real, for, in fact, since 1932 it has been in close alliance with President de Valera's Government, which it helped to put into power. There are signs that the two-party system will not be permanent, for at the moment of writing the Opposition has very little real strength in the country. Whether its possible collapse will mean a larger number of small groups, or a period of one-party politics with no parliamentary opposition, it is difficult to prophesy.

Citizenship of the Free State is regulated by an Act of 1935. All citizens of 21 and upwards are entitled to vote for and be elected to the Dáil. The *Fianna Fail* (Government) Party has a nominal membership of seventy-eight, but one other deputy consistently votes with it. *Fine Gael*, the Opposition party, has a nominal membership of fifty-six and an effective membership of sixty-five. There are eight Labour deputies and one Independent. The chairman of the Dail receives a salary of £1000 a year and deputies £360 a year. The *Ard-Chomhairle* (Executive Council or Cabinet) consists of the President, elected by a vote of the Dail, and seven Ministers nominated by him, who must be deputies. Ministers are paid £1000 a year, and the President £1500 free of tax, with the use of an official motor-car. Since 1933 there has been no oath of allegiance. The Governor-General, who has now almost no duties, has an annual allowance of £4000.

SPORTS AND PASTIMES. The Irish people have always been interested in athletic prowess. As far back as 1000 B.C. we have evidence of a meeting called the *Tailteann Games*, which was held at Tara under the auspices of the Irish kings. These



PRESIDENT DE VALERA AND HIS CABINET

Photo: March of Time

was expected. Critics of proportional representation usually charge it with splitting the body so elected into a large number of minority groups, and, in fact, this is what the system should normally do. In the Free State the two great political parties formed during the struggle over the Treaty in 1922 have not merely resisted this centrifugal tendency, but have steadily absorbed all the smaller parties, so that at present only the Labour Party and a single independent member remain outside them. In the case

games continued to be held right down to the twelfth century A.D. To them came athletes from all parts of the country, who competed with each other when the councils which opened the gatherings were concluded. In the records relating to these games, we have at a very early date references to the national game of hurling. Right down through Irish history there are mentions of this game, which seems to have continued to be played in various forms to the present time.

To-day it is under the control of the Gaelic Athletic Association, established quite modestly in 1884, but now with a membership of well over 100,000—all amateurs—and a great amount of popular support. Almost every town and village has its own G.A.A. Club. Competitions are held in each county, in various grades; then the counties compete against each other until a champion county is found for each of the Provinces, which in turn compete for what is described as the All-Ireland Championship. At the Senior Final, of this Championship each September, between forty and fifty thousand people are present in the national stadium, Croke Park, Dublin—a remarkable attendance considering the population of the country.

The game is now played by fifteen men aside, and is exhilarating to watch on account of the skill and speed which is displayed, especially in first-class games. It is played with a stick known as the "camán," which is no more than half an inch thick all the way down, but which from the hand-grip broadens into a flat blade about 4 to 5 in. wide at the bottom. It is shaped roughly in form of an L, with a curve where the right angle is. It is made of ash. The ball is approximately 3 in. in diameter and is made of cork, covered by worsted, with an outer covering of pigskin or leather. Play is for half an hour each way, and the size of the pitch is from 140–160 yds. long and 84–100 yds. wide. Goal-posts are 16 ft. high, with a cross-bar 8 ft. from the ground. They are 21 ft. wide. Scores are: a goal if the ball is played between the posts, under the cross-bar; a point if the ball goes over the cross-bar at any height, provided it is between the lines of the uprights. The team scoring the greatest number of points wins. A goal equals 3 points. The ball can be handled, but not carried. It can be struck in the air, from the hand or on the ground. As we have said, the game moves at a great pace, and to be able to stand up to an hour of it is a real test of physical fitness.

Companion game to hurling, and also under the auspices of the Gaelic Athletic Association, is Gaelic football. This has not the antiquity of hurling, but football has

been played in Ireland for a long time, although it was not put upon an organized basis until the advent of the Association in 1884. The arrangement of competitions is as for hurling, and the same fields are used. Number of players aside is the same (fifteen), and so is the duration of play and the method of scoring. The ball is circular, not oval, and is approximately 9 in. in diameter (equivalent to the size 5 "Association" ball). Players are allowed to handle the ball, but not to carry it, nor are they allowed to throw it. It can be "hand-passed," that is, tapped to another player, however. Here, again, the play is open and speedy, and is calculated to be a real test of the fitness of the player.

In both games the standard arrangement of players is the same—goal-keeper, three backs, three half-backs, two "centre-field" men, three half-forwards, and three full-forwards.

Other field games played in the Free State are Rugby and Association football, hockey, and cricket, but these are importations and have nothing like the same number of participants as the national games, and are nowhere near so widespread. Rugby is entirely amateur, and is played under Rugby Union rules. The high-spots of the year are the international games with England, Scotland, and Wales. In these games, however, the Irish team has to call on a number of Irishmen playing with English clubs; and it can be said that during the remainder of the year public interest in the game is not too strong.

Association football is played principally by professional clubs, and outside the bigger towns has no hold at all.

Hockey is amateur, but its supporters and games do not reach great proportions.

Cricket is also amateur, but has a very small following.

For women there is a companion game to hurling, which is controlled by a separate association established in 1904. It is called "Camogie," and has twelve players aside, with games of twenty minutes each way. It commands a good deal of support, though it is by no means on the same footing as the men's game yet. It is, however, growing. The general rules of the game are similar to hurling.

There are also women's hockey teams, but they are very few.

Another distinctively Irish game is handball, which is competed for on an individual basis. "Ball alleys" exist in various parts of the country and organized competitions are held. It has its equivalent in the game of "fives," or perhaps squash rackets or the Spanish pelota, but, as its name implies, is



SPORT IN IRELAND

1. The final of the All-Ireland Gaelic Football Championship, Mayo v. Lais, 1936. 2. Limerick and Kilkenny contesting the 1936 Hurling Championship Final. Hurling is the most ancient Irish game. 3. The Limerick Grand Prix, one of the premier road racing events. 4. University hockey game. Though not widely played, the standard of Irish hockey is very high. 5. The World's Wrestling Championship (All-Ir.). Dan O'Mahony (Donno) successfully defending it for Ireland against Charley Stack. 6. The start of a cross-country championship in Phoenix Park. 7. The jumping championship at the Dublin Horse Show. 8. Canadian bowlers in play against Ireland.

played with the hand, the ball (solid, or semi-solid, rubber) being thrown or struck against the wall and the player scoring 21 points first, or with a margin of 2 points above this, winning. The points usually are scored by the faults of the opponent, the ball being made to rebound out of his reach or otherwise being made unplayable. Fitness and agility are essential requirements for the good handball player.

As regards general athletics, Irishmen have always excelled at weight-throwing and long- and high-jumping, and towards the end of the last century some remarkable records were put up, some by athletes who had emigrated to America and others by men who competed at Irish meetings. Many were natural athletes, achieving their results without intensive training, and there are instances where families of two or three brothers were thus gifted, and vied with each other in establishing records. To-day, athletics are experiencing a revival, largely on account of the interest displayed in them by the Civic Guard and the Army, and gradually the number of meetings held is increasing, and the standard of achievement is improving. Except in isolated events, however, international fame has still to be achieved, but there is no doubt that with intelligent handling it will come about, for unquestionably the general physical standard of the country is high and there is abundant interest in sport.

Amateur boxing is a field in which greater progress has been made recently, again through the interest of the Civic Guards and Army, and in international competitions Irish boxers have more than held their own.

The sports and pastimes already enumerated by no means exhaust the catalogue of those which can claim a following in the Irish Free State. Coursing is well supported, and so are the harners. Swimming, rowing, and boating have their followers, the first-named being particularly strong. There are also a fair number of tennis courts and golf courses to be found.

There is a distinctively Irish game played along the country roads in the southern counties, especially in Cork, called "bowl-playing." An iron ball about 26 oz. in weight and 2½-3 in. in diameter is used, and two men compete in a "bowl of odds," as a match is called. They throw alternately, under-arm, and he who covers the distance between two points, usually some miles apart, in the fewest number of throws, wins the match. Tremendous throws are made, and skill in negotiating bends and other difficulties is remarkable. Although not, strictly speaking, on an organized footing,

it nevertheless has its "stars" and a good following.

In summing up the position of sports and pastimes in the Irish Free State, it can be said that the people generally take a keen interest in a sport of one kind or another, but that a greater percentage actively participate in them as well, than is the case in countries that are more highly industrialized. The athletic spirit is strong, and is reflected in the general standard of physical development in no uncertain fashion.

SYNGE, JOHN MILLINGTON. See article, Vol. VIII.

THRIFT, WILLIAM EDWARD. Thrift was Vice-Provost of Trinity College, Dublin; Erasmus Smith Professor of Natural and Experimental Philosophy, Dublin University, 1901-29. He was a Commissioner of National Education in Ireland prior to the establishment of the Free State. He was elected M.P. (Dublin University) for the Southern Irish Parliament established 1920. After the approval of the Treaty, 7th January, 1922, he attended a meeting of members of the Southern Parliament held at the Mansion House, to set up the Provisional Government in accordance with Article 17 of the Treaty. He has been a member of the Dail ever since.

TRADE, EXTERNAL. The course of the external trade of the Irish Free State since 1929 has been influenced by a number of significant factors. Among the most important of these—to some of which more detailed reference will be made below—have been the world depression in prices and trade which began in that year, the policy of industrial and agricultural development followed by the Irish Free State Government, and the imposition by the British Government of special duties on imports of certain Free State produce under the Irish Free State (Special Duties) Act, 1932.

The value of Irish Free State trade in each of the past eight years is shown in the following table—

Year	Imports	Exports of Domestic Produce	Re-exports	Total Trade	Excess of Imports
(In thousand £'s)					
1929	61,316	46,225	1066	108,607	14,025
1930	56,776	41,768	1178	101,721	11,531
1931	50,461	35,546	795	86,802	14,120
1932	47,574	25,173	1137	68,884	16,264
1933	35,789	18,439	582	54,810	16,768
1934	30,122	17,574	351	57,046	21,197
1935	37,348	19,615	305	57,268	17,425
1936	39,916	21,995	528	62,439	17,392

The decline in imports into the Irish Free State was more gradual than the world trend, due partly to the proportionate increase in

volume of imported raw or simply prepared goods (other than foodstuffs) and of machinery, in relation to total imports. The decline in exports was also more gradual up to 1932, when there was a steep fall both in volume and prices as a result of the imposition of the British Special Duties. This fall was accentuated in 1933, when there was a sharp decline in the exchange of foodstuffs throughout the world following an extension in the protection of the agricultural commodities, and the consequent narrowing of markets for surplus agricultural products.

Fluctuations in the value of trade are due to the combined changes in the prices of commodities and the volume of trade. Eliminating the effect of the price factor, the volume of imports fell by 15 per cent from 1929 to 1935, and the volume of domestic exports by 28 per cent (compared with corresponding decreases in the values of 39 per cent and 58 per cent respectively). Of the total decrease in the value of exports lower average prices accounted for 65 per cent, and a decrease in volume for the remaining 35 per cent.

The following table shows in six main classes the distribution of the total imports and of the domestic exports of the Irish Free State—

goods imported. The decline in the imports of certain classes of goods which are of a kind being manufactured in the Irish Free State, of which some particulars follow, is particularly striking—

	Value		Decrease per Cent
	1931	1935	
Wheaten flour . . .	£ 1,662,402	£ 106,940	93.6
Bacon	1,288,334	7	100.0
Boots and shoes—leather . . .	1,438,820	422,725	71.0
Outer garments . . .	1,151,309	233,805	79.8
Touring motor cars . . .	974,304	81,919	91.6
Sugar (refined) . . .	788,517	260,604	66.9
Maize products . . .	416,468	17,790	95.7
Corn offals	351,720	7	100.0
Cocoa preparations . . .	293,220	1285	99.6
Bicycles	222,454	718	99.7
Underwear	289,633	79,741	72.5
Commercial vehicles . . .	208,613	3458	98.3
Bakers' bread and buns . . .	197,469	997	99.5
Sweets and sweetmeats . . .	196,095	5,591	97.2

Among the items showing the largest decreases in imports are wheaten flour, bacon, boots and shoes of leather, and wearing apparel, the raw materials for the manufacture of which are produced, or are to a very large extent capable of being produced, in the Free State. Accompanying the decrease in

Year	Live Animals	Food, Drink, and Tobacco		Other Raw Materials or Manufactured Goods		Parcel Post (non- dutiable)	Total
		Raw or Simply Prepared	Manufac- tured or Prepared	Raw or Simply Prepared	Manufac- tured or Prepared		
Total Imports—in thousand £'s							
1929	1580	10,314	12,487	6546	29,295	1094	61,316
1930	1511	8059	11,849	6575	27,871	911	56,776
1931	1339	7174	10,284	5874	25,025	765	50,461
1932	775	7386	7726	5292	20,943	453	42,574
1933	385	5889	4770	4823	19,605	317	35,789
1934	514	7305	4192	5530	21,251	329	39,122
1935	526	6137	3673	5464	21,217	331	37,348
1936	645	6941	3676	6698	21,600	356	39,916
Domestic Exports—in thousand £'s							
1929	19,695	5229	14,743	2339	3477	742	46,225
1930	21,051	3889	12,698	1365	4076	687	43,768
1931	18,328	3943	9744	997	1886	649	35,546
1932	11,890	3135	7240	853	1526	529	25,173
1933	7512	2033	6828	1060	740	266	18,439
1934	6115	1974	7458	1085	692	249	17,574
1935	7316	1865	8252	1281	657	248	19,615
1936	8953	2078	8415	1667	642	241	21,995

The legislative measures undertaken by the Government during the last six years have exercised an important influence on external trade, particularly on the type of

the imports of certain classes of manufactured goods between 1931 and 1935, there has necessarily been an increase in the imports of certain classes of raw materials and



ANGLO-IRISH TRADE

1. Modern Irish train which carries tourists to Bray, a famous seaside resort.
2. One of the Dublin-Liverpool air liners which carry many business men on important journeys.
3. Store cattle in an Irish market; they are exported to Britain and fattened for killing.
4. Loading a cargo of Irish eggs at Dublin.

Photos. Irish Independent; Irish Times, Irish Tourist Association, March of Time

machinery. For instance, as an offset to a decreased import of wheaten flour of £1,555,000, it must be taken into account, in spite of increasing home production, that imports of wheat increased by £813,000, while there was also an increase in imports of grain-milling machinery. Against decreases in the imports of bacon there were largely reduced exports of pigs. Imports of leather boots and shoes declined by over £1,000,000, but imports of leather dressed upper and of sole and insole hides increased by £226,000. The manufacture of these

classes of leathers has, however, recently been undertaken in the *Saorstát*. Imports of complete motor vehicles decreased by over £1,000,000, but the imports of motor vehicle parts and accessories increased by over £500,000. Large decreases in imports of apparel took place but, in spite of increased production by the home mills, there were increases in the imports of certain textiles required for the production of wearing apparel.

In addition to the decreases in the imports of manufactured goods and the

increases in the imports of certain raw materials, the industrial expansion of the last quinquennium has necessitated large importations of machinery and other capital equipment. The following table shows the value of the imports of certain types of machinery for industrial purposes in the two quinquennial periods 1926-30 and 1931-35.

Description of Machinery	Value		Increase in Value per Cent
	1926-30	1931-35	
	£	£	
Boot and shoe making . . .	34,101	222,040	551.1
Grain-milling . . .	140,187	311,969	122.5
Textile . . .	142,262	295,777	107.9
Printing, bookbinding . . .	317,039	466,872	47.3
Sewing machines and parts	141,532	225,375	59.2
Boiler and boiler-house plant . . .	106,549	268,585	15.7
Woodworking . . .	50,394	104,318	107.0
Tobacco and cigarette . . .	75,617	79,392	5.0

Owing to the increasing need for particulars of the origin of imports, especially for the purpose of negotiating trade agreements with other countries, it was made compulsory for importers as from 1st April, 1935, to declare the country of origin as well as of

consignment of all imports. The expression "country of origin" is defined, in the case of natural products, as the country where the goods were produced, and, in the case of manufactured products, as the country where they were transformed into the condition in which they are introduced into the Free State, it being understood that packing, re-packing, sorting and blending do not constitute transformation. The following table shows the total value of (A) exports consigned from and (B) imports originating in Great Britain and other countries during the twelve months ended 31st March, 1936--

Twelve Months ended 31st March, 1936			
	Consign-ment A	Origin B	Difference (Increase + Decrease -) B on A
Great Britain . . .	25,644,640	19,764,664	- 5,879,976
Northern Ireland . . .	1,619,841	554,730	- 1,065,111
Other countries . . .	10,221,198	16,906,137	+ 6,684,939
Re imports (Irish Free State Origin) . . .	--	280,148	+ 280,148
Total . . .	37,505,679	37,505,679	-



STREET MARKET, CORK

In the city of Cork and the surrounding district, the shawl is the usual covering out of doors

Photo Topical

From the annual statements of the trade of the United Kingdom, it is known that of the exports from the Irish Free State to the United Kingdom about 95 per cent are retained there. Exports of Free State produce to the United Kingdom amounted to £18,500,000 in the twelve months ended 31st March, 1936, whereas imports of United Kingdom origin amounted to £20,250,000. In the same period Free State exports to other countries amounted to £1,750,000, and imports therefrom (including re-imports) to £17,250,000.

The course of Irish Free State external trade since 1931 has, apart from the world depression in prices and trade, been substantially affected by the following three factors—

- (a) The economic dispute between the Irish Free State and the United Kingdom
- (b) The industrial development policy of the Irish Free State Government
- (c) The agricultural policy of the British Government.

Following the imposition of the customs duties on goods imported from the Irish Free State into the United Kingdom, the Government of the Irish Free State decided to grant export bounties to exporters of certain classes of goods to which the duties referred. The amounts actually paid in bounties on agricultural and fishery products during each of the financial years, 1932-33 to 1935-36, were as follows: 1932-33, £1,345,458; 1933-34, £3,025,619; 1934-35, £4,206,733; and 1935-36, £2,765,279. In interpreting the statistics of exports the influence of the bounties must be taken into account.

Bounties have also been paid on exports of certain industrial products. The amounts actually paid in bounties on these products during each of the financial years, 1932-33 to 1935-36, are as follows: 1932-33, £11,545; 1933-34, £68,011; 1934-35, £78,255; and 1935-36, £81,146.

Trade between the Irish Free State and the United Kingdom during recent years has been also influenced by the trade arrange-

ments for the years 1935 and 1936 concluded by the Governments of both countries. The chief effect of the arrangement of 1936, which covered a wider field than that of the previous year, was to increase the quotas for fat cattle and bacon exported by the Free State to the United Kingdom, and to secure that Free State coal requirements would be taken from



PACKING BUTTER FOR EXPORT

Photo. March of Time

the United Kingdom. Certain reductions in British and Free State customs duties were also made as a result of the arrangement.

A wide range of goods is covered by the operation of quota orders made under the Control of Imports Act, 1934. This Act is designed to assist in the development of home industries, and to facilitate the conclusion of trade agreements with other countries.

TRALEE. See article, Vol. VIII.

TRIM. See article, Vol. VIII.

ULSTER. See article, Vol. VIII.

ULSTER, EARLS OF. See article, Vol. VIII.

WATERFORD. See article, Vol. VIII.

WEXFORD. See article, Vol. VIII.

WICKLOW. See article, Vol. VIII.

WILDE, OSCAR. See article, Vol. VIII.

YEATS, WILLIAM BUTLER. See article, Vol. VIII.

NEW ZEALAND SECTION

ALLEN, THE RT. HON. SIR JAMES (born 1855). Minister of Defence from 1912 to 1920, he had the immense task of controlling the Dominion's war effort. In 1920 he became High Commissioner for New Zealand in London and played a prominent part in the discussions of the Inter-Imperial Relations Committee set up by the Imperial Conference of 1926. Sir James was born in South Australia and was educated at Clifton College and St. John's College, Cambridge, playing Rugby for the University in 1875-76. Soon after going to New Zealand he became a member of the Dunedin City Council, and he entered parliament in 1887. He was created K.C.B. in 1917 and G.C.M.G. in 1926. He has been a member of the Legislative Council since 1927.

ANTIPODES ISLAND. See ANTIPODES, Vol. I.

ARMSTRONG, THE RT. HON. HUBERT THOMAS (born 1875). Labour Minister. He was born and educated at Bulls, New Zealand. He worked in the flax-mills in the Manawatu county, and in the bush country, and then went to the Waihi goldfields and found employment in the gold mines there. He became president of the Waihi Miners' Union. For some years he was prominent in industrial and political organizations of the Labour movement, being vice-president of the New Zealand Federation of Miners, and of the New Zealand Federation of Labour. He became also a vice-president of the New Zealand Labour Party. In 1922 he was elected Member of Parliament for the East Christchurch seat. He represented the New Zealand Government at the Labour Conference at Geneva in 1937.

ARMY, NEW ZEALAND. See ARMY, Vol. I.

ART, ARCHITECTURE, DRAMA, LITERATURE, MUSIC. Interest in the arts in New Zealand has greatly increased in the past few years, and there are definite signs both in literature and in painting of the emergence of distinctive New Zealand schools.

In literature one of the earliest works to express the spirit of the land was F. E. Maning's *Old New Zealand*, which told the story of a "Pakeha-Maori," a white man living among the Maoris, before the country was British. Alfred Domett, friend of Robert Browning, gave in *Ranolf and Amohia* poetic expression to the genius of the

Maori race. The length of this work and the aridness of some of it prevented its popular success, but it contained many passages of poetic beauty. A very different poet was Thomas Bracken, whose work is much more widely known. William Pember Reeves, who, like Domett, attained high Cabinet rank, wrote many poems inspired by genuine feeling, but his work in prose, notably *The Long White Cloud*, was of higher quality. The Celtic inspiration of Jessie Mackay and the sincerity and careful craftsmanship of Arnold Wall have undoubtedly exercised considerable influence on New Zealand literature. Alan Mulgan has, in poems, plays, travel books, and a novel (*Spur of Morning*), displayed notable gifts in interpreting life in the Dominion. The case of Katherine Mansfield is unique in New Zealand's literary history. Her world-wide fame as a writer of short stories has not been approached by any other of the country's writers.

At the present time, however, there are many whose work is worthy of attention. Of these Robin Hyde is perhaps the most versatile. In a very few months recently she had published in London a volume of poems *The Conquerors*, a novel of the war, *Passport to Hell*, and a biography of that picturesque character in early New Zealand history, the Baron de Thierry, entitled *Check to Your King*. Eileen Duggan's poems are widely admired and she has recently been decorated for her services to literature in New Zealand. Gloria Rawlinson, who is very young, seems to have a brilliant future in poetry. Among men J. C. Beaglehole, also a historian, has a fine command of metre. Prominent among the New school of poets are A. R. D. Fairburn, R. A. K. Mason, Ellen Curnow, and Denis Glover.

Novelists include G. B. Lancaster, Jane Mander, Nelle Scanlan, Charles Allen, Rosemary Rees, John Brodie, J. A. Lee, and Ngaio Marsh, whose successes in detective fiction recall that it was a New Zealander, Fergus Hume, who wrote that classic of the genre, *The Mystery of a Hansom Cab*. Much good work has been done in the fields of history, economics and the natural sciences by men like James Hight, J. B. Condliffe, G. H. Scholefield, Peter Buck, Sir Apirana Ngata, Johannes Andersen, Elsdon Best,



PRIMITIVE ART OF NEW ZEALAND

1. Carved wooden lintel. 2. Wooden marionette (called Kareta). 3. Decorated fish-hook. 4. Carving in wood. 5 and 6. Carved wooden trumpets (Pu-Kaes). 7. Preserved human head showing tattooed designs on the face. 8. Neck ornament (Tiki) made from a piece of human skull. 9. Fiddle-shaped hand club carried at dances. 10. Chief's jade battle-axe (Mere Pounamu). 11. Embroidered border of a cloak. 12 and 13. Enlarged details of the pattern on the cloak.

James Cowan, T. L. Buick, W. P. Morrell, H. Guthrie-Smith, and many others. D'Arcy Creswell has carved out a style of his own in prose and poetry—an encouraging indication that in this field, as in others of the arts, New Zealanders are gaining courage to think for themselves. Hector Bolitho has won from the Royal archives at Windsor a store of material for biography. Many New Zealanders have distinguished themselves as collectors of books and manuscripts, notable examples being Dr. T.

some works of John Gully, who may be called the founder of the school. Born at Bath, he went to New Zealand in 1852, and on the outbreak of the Taranaki War removed to Nelson. He was a conscientious and able painter of New Zealand scenes. The Dutch painter, Van der Velden, who made New Zealand his home, exercised a more "modern" influence, and his work is eagerly sought.

Sydney Thompson, who has returned to New Zealand after many years in France,



GENERAL VIEW OF NAPIER, NORTH ISLAND

Architecture in New Zealand draws its inspiration from traditional and modern :

Photo: High Commissioner for New Zealand

Hocken, Dr. R. McNab, Alexander Turnbull, Dr. Joseph Kinsey, and Mr. F. W. Reed, of Whangarei, the bibliographer of Alexander Dumas père, whose translation of *Les Baleiniers* (*The Whalers*) has recently been published in London.

In painting New Zealand is only now beginning to overcome the handicaps of remoteness from the Old World. The influence of a constant stream of artists who have gone abroad for years and then returned to the Dominion has at last begun to make itself felt. The New Zealand water-colour school is a very strong one, but it was formerly prone to be photographic rather than penetrative in character. This defect is seen in

is one of a group which has had a strong influence upon New Zealand art, and includes Alfred W. Walsh, L. H. Booth, R. Proctor, and Menzies Gibb. Archibald Nicoll has achieved eminence as a painter of portraits and landscapes. T. A. McCormack is one of several water-colour artists of to-day whose work is admired beyond New Zealand. Two women artists who have died in recent years did much for the development of art in New Zealand. They were Miss D. K. Richmond and Miss M. O. Stoddart. The former, a "romantic" artist, owed some of her talent to her father, J. C. Richmond, and some of its development to another New Zealander, Miss Frances Hodgkins, who has

lived in Europe for many years. Mrs. A. Elizabeth Kelly has attained considerable success in London with her works.

In black-and-white work New Zealanders have often won distinction abroad. The outstanding example is David Low, the cartoonist.

Dramatic art in New Zealand has developed greatly in the last fifteen years. The vogue of the cinema, which almost ended the legitimate theatre, produced a strong reaction, resulting in the forming of repertory theatres in many centres. The movement will receive a powerful impetus from the decision of the broadcasting authorities to establish at Wellington a national conservatorium for music and the dramatic arts. New Zealand has produced many talented musicians, but so far not many great composers. Alfred Hill has, however, made masterly use of Maori musical themes.

New Zealand architecture has as yet developed few distinguishing characteristics. It draws its inspiration from traditional and modern sources. An increasing use of concrete has necessitated simplified structural forms, and the rebuilding of Napier affords many examples of good work. Domestic architecture is of a much higher standard than it was twenty years ago, and New Zealand houses are planned for the greatest possible convenience in working, since domestic help is difficult to obtain, especially in the country. The Auckland War Memorial Museum, the Dominion Museum and Art Gallery at Wellington, and the Bridge of Remembrance at Christchurch are examples of New Zealand architecture which have won praise from overseas experts.

Maori Art. All Maori art was applied art. Its purpose was decorative and not interpretative. Religion had comparatively little effect upon it, for the Supreme Being of the Maori was far too sacred to be delineated in stone or wood. When the limitations imposed upon Maori artists are considered, their work is surprisingly refined and delicate. Their tools were primitive and the threat of sudden attack by warlike foes ever present. But the race loved beauty, and its artists were employed to decorate not only houses, canoes and weapons but the human body.

Maori design belongs to the category of Geometric Ornament. A few animal forms are introduced and also the human form, highly conventionalized. Most of the decoration is in relief. "The human form, and especially the face," writes W. Page Rowe, in his *Maori Artistry*, "was used to express defiance, either protective or aggressive, an emotion which the Maori himself expressed with wide-open mouth and protruding tongue—a symbolic grimace which is not

used exclusively by his nation. He therefore exaggerated both in his designs, and the eyes also, by shell-inlay, and by extending the orbits. But the important thing to notice is that he was not content with just expressing defiance. He never lost sight of decorative possibilities; on the contrary, he gave them first place. True to his artistic instinct, and his traditional point of view, he realized the harmony and decorative value of the leading lines of the face as elements from which an ornamental design could be made. And he saw in the exaggeration of the features not a limitation but a furtherance of that end."

In their designs for door frames, canoe prows, and *meres* (clubs), Maori artists were very successful in evolving lovely forms, partly by the use of skilful repetition. Face-tattooing showed Maori genius in another form—barbaric but undoubtedly artistic. In painted decoration and in textile designs the Maori was also remarkably skilful, and the movement to promote a revival of true Maori arts and crafts, developing and not merely imitating the achievements of the past, is abundantly justified.

AUCKLAND. See NEW ZEALAND, Vol. VI.
BARNARD, THE RT. HON. WILLIAM EDWARD. Speaker of the House of Representatives, and Labour Member for Napier since 1929. He is a lawyer by profession, and a New Zealander by birth. He saw service in the World War.

BUCK, DR. PETER HENRY (Te Rangi Hiroa) (born 1880). Athlete, politician, soldier, doctor and anthropologist. He was born at Urenui, the son of W. H. Buck and Ngarongo-ki-tua. He was educated at Te Aute College and the University of Otago where he graduated in medicine. He was amateur long jump champion of New Zealand in 1900 and 1904. From 1905 to 1908 he was health officer to the Maori race and in the latter year was elected M.P. for the Northern Maori division. In 1912 he became Minister for Native Affairs in the Mackenzie Ministry. In 1914 he went as medical officer with the first Maori contingent which served in Egypt and Gallipoli. In 1916-17 he was second in command of the New Zealand Pioneer Battalion. He received the D.S.O. After the War he became director of Maori hygiene. In 1927 he joined the staff of the Bishop Museum, Honolulu, subsequently becoming Director. His work in anthropology has also been honoured by a professorship at Yale and an honorary doctorate of the University of New Zealand.

CHRISTCHURCH. See NEW ZEALAND, Vol. VI.

COATES, THE RT. HON. JOSEPH GORDON (born 1879). Prime Minister of New Zealand

from 1925 to 1928, Minister of Public Works, Transport and Unemployment in the Coalition Government of 1931, and later Minister of Finance in that Government, which was defeated at the General Election of 1935. Mr. Coates was born at Matakohu, North Auckland. He was the first New Zealand-born Prime Minister and has represented Kaipara in Parliament since 1911. He served in France from 1917 to 1919 and received the Military Cross and bar. He joined the Massey Government in 1919 and held various important portfolios before becoming Prime Minister. He represented New Zealand at the Ottawa Conference and the World Economic Conference. He was responsible for a number of drastic measures to deal with the economic depression of 1931-35.

COMMUNICATIONS AND TRANSPORT.

The problem of communications has exercised a dominant influence on New Zealand history, and this influence has been political, economic, social, and religious. The remoteness of the country was in the first place responsible for the long period which elapsed between the discovery by Tasman and the

voyages of Cook. It was responsible, with the reputation for ferocity enjoyed by the Maoris, for the comparatively spasmodic interest felt about the country during the following four or five decades. When colonization at last began on a systematic scale, there was a long voyage of four or five months to contemplate, and only the brave in spirit could make the decision which would cut them off completely from the world they had known.

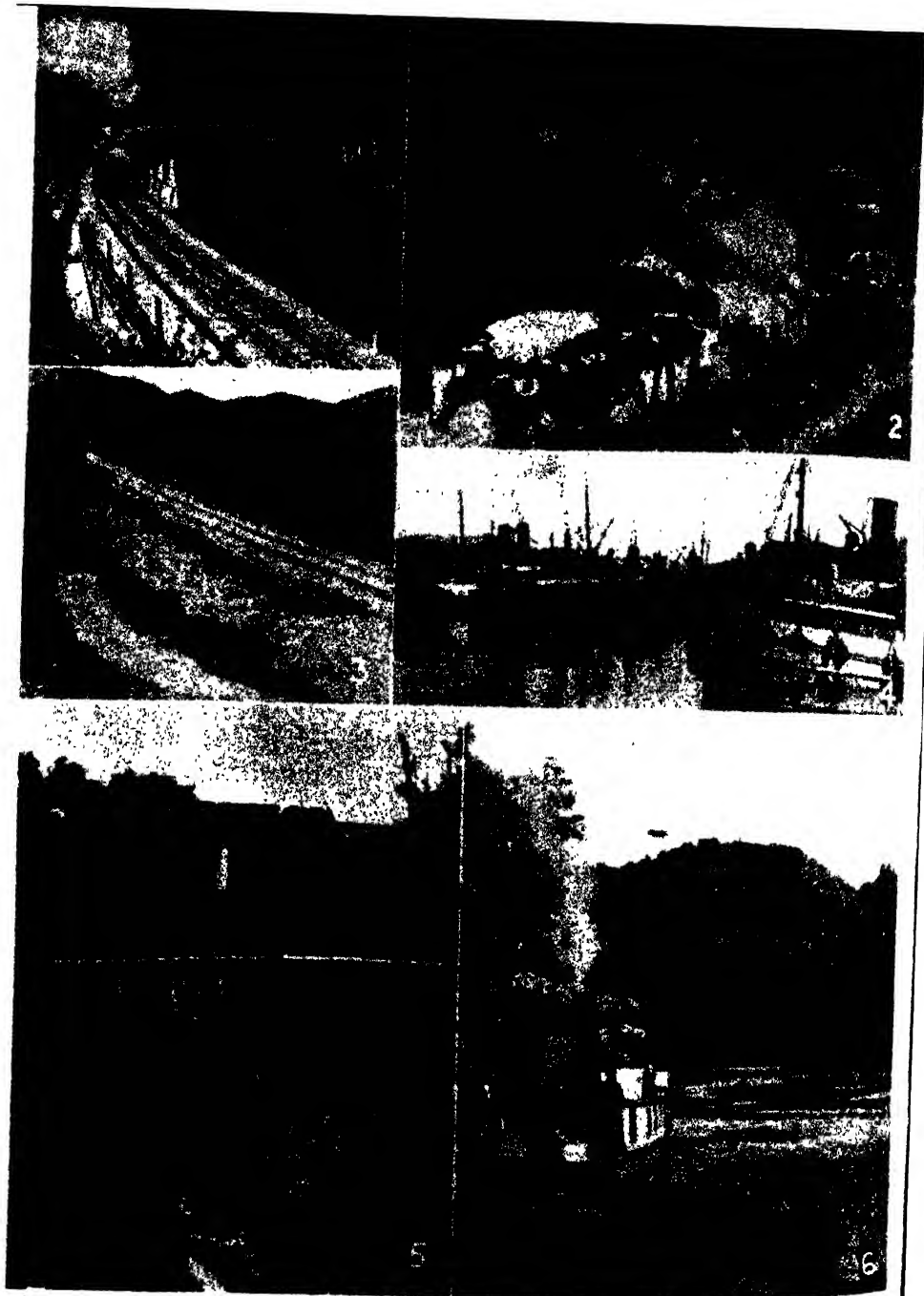
In New Zealand itself communication was extremely difficult. The country was forest covered and broken up by high mountain ranges and swift rivers. Settlements were made at various points on the coast, and from the very nature of things they tended to become separate colonies. The influence of the different missions tended also to be local. A letter from Auckland sometimes reached Wellington more quickly by travelling to Sydney first. A coastal steamer service between the various settlements was for many years a preoccupation of local politics. In the Maori Wars of the '60's the difficulty of communications was a constant theme of the reports of the commissariat



CLIMBING THE RIMUTAKA INCLINE

Usually five engines are attached to a train climbing this incline, which has a gradient of 1 in 15.

Photo: High Commissioner for New Zealand



TRANSPORT

1. Hapuwhenua Viaduct. Three miles north of Ohakune it passes through virgin bushland which can be seen lining the track. 2. Bullock teams, such as are commonly used by farmers for the transport of wool bales. 3. New road at Paekakouki Hill. The old one can be seen in the foreground. There are now 12,000 miles of highway in New Zealand. 4. Wharves at Wellington. In 1935 shipping totalling over 2,500,000 tons entered and left New Zealand ports. 5. "Daylight Limited," from Auckland to Wellington passing over the Maunganui-o-teas Viaduct. 6. Steamer on the Wanganui River. Many up-country farmers depend on river steamers for passage and trade.

Photos: High Commissioner for New Zealand

department, and it was also one of the reasons for the disastrous controversy between the Governor, Sir George Grey, and General Sir Duncan Cameron, Commander of the Imperial Forces. The Maori forces were a formidable barrier to internal communication in the North Island, and when at last telegraphic connection was made between Auckland and Wellington, the Colonial Office rejoiced at the remarkable change which had come about in New Zealand affairs.

The first New Zealand railway, from Christchurch to Lyttelton, was opened in 1863, and in the same year the Auckland Provincial Council began a line from Auckland to Drury, one of the links in the commissariat chain to the forces in the Waikato. To-day the State railways cover more than 3300 miles and extensions, notably between Napier and Gisborne, are proceeding. The cost of railways to 31st March, 1936, has been nearly £60,000,000.

To equip New Zealand with a good system of roads has been a gigantic task for a small population. Since the Public Works scheme of Julius Vogel in 1870, expenditure on construction of roads and bridges from the Public Works Fund alone has been more than £23,000,000. There are now more than 12,000 miles of main highways.

Telegraph lines now cover 12,109 miles, and in its proportion of telephones to population New Zealand is exceeded only by the United States and Canada. Cable and wireless communication with other countries is very efficient.

Overseas steamship communications for freight, mails, and passengers occupied a great deal of attention in the New Zealand Parliament during last century, and large sums were paid in subsidies. For a time communication was established by a service crossing the Panama isthmus, but this did not last very long. When the canal was opened in 1914, a direct route of great value to New Zealand was opened up. Canal charges and the greater speed of ships has led in recent years to a return by some cargo ships to the older routes via the Horn and the Cape of Good Hope. The fastest passenger routes are via San Francisco or Vancouver, but subsidized competition has led to the withdrawal of the British service from the former route.

Air mails via Australia now bring New Zealand within eighteen days of London, and the extension of the flying-boat service to Australia and across the Tasman sea to New Zealand will cut the time down to less than a fortnight.

COOK ISLANDS. See article, Vol. II.

DUNEDIN. See NEW ZEALAND, Vol. VI.

EDUCATION. The present system of free, secular, and compulsory education in New Zealand owes its origin to the Education Act of 1877, which almost coincided with the



MODERN EDUCATION IN NEW ZEALAND

1. Infants' school at Wellington, showing comfortable desks and chairs and modern decoration and ventilation.
2. Research workers in a chemistry laboratory.
3. Cookery class in a Girl's School, Wellington.

Photos. High Commissioner for New Zealand

abolition of the Provinces. Before this time there had been no uniformity in educational systems and standards in the nine Provinces. Auckland was a "nursery of the denominational system," Wellington "a stronghold



NEW ZEALAND SCHOOLS AND UNIVERSITIES

1. Boys Grammar School, Auckland. 2. Massey Agricultural College, Palmerston North, a Constituent College of the University of New Zealand. 3. University College, Auckland. 4. Curran Street Primary School, Auckland.

Photos: High Commissioner for New Zealand

of the private schools"; Nelson had the first public school system in New Zealand; in Otago, as became a Scottish settlement, the Presbytery ruled supreme. The Education Act set up as a central authority the Education Department, controlled by a Cabinet Minister and a Permanent Secretary. Twelve education districts were to be governed by Boards, elected by school committees which managed educational matters within their own districts.

In broad outline the system of 1877 is in vogue to-day, but in 1914 the Department of Education was reorganized and the Inspector-General of Schools became Director of Education. At the end of 1935 the number of pupils receiving primary education was 234,448, of whom 26,869 were in private schools, 7876 in Maori village schools, and 1444 were being taught by correspondence from a special department in

Wellington. Pupils receiving post-primary education numbered 32,938, of whom 7323 were in technical schools, 4508 in private and endowed secondary schools, 519 in correspondence classes, and 373 in Maori secondary schools. In addition, 10,833 pupils attended various technical classes. University students numbered 5105.

Junior free places in post-primary schools are granted to qualified pupils for two years, with a possible extension to three years, after which senior free places are awarded. Of scholars attending Government post-primary schools, 99 per cent receive free tuition. There are 2502 primary schools, including sixteen "intermediate" (formerly "junior" high) schools established since 1923, and thirty-eight secondary schools. Free railway privileges and board for primary and secondary pupils cost nearly £100,000 in 1935.

The University of New Zealand was founded by the University Acts of 1870, 1874, and 1875. It resembles the University of London in that its teaching is done through its constituent colleges. These are the University of Otago; Canterbury, Auckland, and Victoria (Wellington) University Colleges; Canterbury and Massey (Palmerston North) Agricultural Colleges. To some extent the University Colleges specialize, though general courses in Arts and Science are available at all four. Final examinations for M.A., M.Sc., B.A., B.Sc., Bachelor of Engineering, and in some subjects for Law and Music degrees are for the most part conducted by external examiners, mainly in Britain. This system helps to reduce the effect of isolation from the main centres of learning, as the examiners, especially in rapidly changing subjects, can exercise a considerable influence in this direction. University bursaries enable a large number of students to proceed to a degree with little cost in fees. The University suffers, however, from an insufficiency of staff to cope adequately with the relatively high proportion of the population which proceeds to the University.

Public expenditure on education, which fell to £2,740,545 in 1933-34, was £3,256,670 in 1935-36.

Efforts are being made to relieve the pressure of too many examinations upon school pupils, and already something has been done to make the University Entrance Examination what it purports to be, instead of an indispensable passport to almost any sort of employment.

Valuable supplements to the Dominion's educational forces are provided by the Workers' Educational Association and the National Broadcasting Service.

FAGAN, RT. HON. MARK. Leader of the New Zealand Legislative Council. Born in Tasmania, he was employed in his youth as a miner. He went to New Zealand in 1900, and was a goldminer on the west coast of the South Island for some years. For many years he has been prominently identified with the Labour movement. He represented the New Zealand Parliament at the Geneva Conference of 1935.

FLAG, NEW ZEALAND. See **FLAGS**, Vol. II.

FORBES, THE RT. HON. G. W. (born 1869). Prime Minister of New Zealand from 1931 to 1935. Born at Lyttleton, he was educated at Christchurch Boys High School and became a well-known Rugby player. In 1893 he drew a section of the Cheviot estate, taken over by the Government for closer settlement purpose, and has farmed there ever since. He took a prominent part

in local affairs and in 1908 became M.P. for Hurunui, a seat which he has held in every subsequent election. He was Liberal Whip from 1912 to 1928 and became Minister of Lands and Agriculture in 1928. He represented New Zealand at the Imperial Conference of 1930 and the World Economic Conference. After the General Election of 1935 he was elected Leader of the Opposition, but resigned that position in 1936.

FRASER, THE RT. HON. PETER (born 1884). Minister of Education, and, during the absence of the Prime Minister and Minister of Finance at the Coronation in 1937, Acting-Prime Minister, and Minister for Finance. He was born at Fearn Ross-shire, Scotland. From his earliest years he took a keen interest in politics, and an active part in the Scottish Small Landholders' Act movement. In 1908, believing that Liberalism was a dying factor in politics, he joined the British Independent Labour Party. However, in 1910 he went to New Zealand and worked as a labourer. He joined the New Zealand Labour movement, and became President of the Labour Party. In 1918 he was elected to Parliament for Wellington Central, and has held the seat ever since. He was for some years a member of the Wellington City Council. He came to England in 1935 as a delegate to the Jubilee year conference of the Empire Parliamentary Association.

GALWAY, VISCOUNT. See article, Vol. III.

GEYSERS. See **GEYSER**, Vol. IV.

GLACIERS. See **GLACIER**, Vol. IV.

HAMILTON, THE RT. HON. ADAM (born 1880). Leader of the Opposition since 1936. He was born at Forest Hill, New Zealand, and educated there and at Otago University. He became M.P. for Wallace in 1919 and has held that seat ever since, except for the period 1922-25. He became a member of the Coalition Government in 1931 and was Postmaster-General at the time of the General Election in 1935.

HANAN, THE RT. HON. JOSIAH ALFRED (born 1868). He succeeded Professor J. Macmillan Brown as Chancellor of the University of New Zealand. He was born at Invercargill and was educated at Southland Boys High School. He practised as a lawyer from 1889 to 1909. At the age of 29 he was elected Mayor of Invercargill, and he represented that town in Parliament from 1890 to 1926, when he retired and was appointed to the Legislative Council. He was Minister of Education in 1912 and of Education and Justice in the National Government from 1915 to 1919. He has been a member of the University Senate since 1917. In 1937 he represented the

Legislative Council at the Coronation of King George VI.

HIGHT, DR. JAMES, C.M.C. (born 1872). Rector of Canterbury University College since 1928. He was born at Christchurch and after a brilliant school career graduated M.A. in 1894. After teaching at Auckland Grammar School he became a lecturer and finally Professor of History and Economics at Canterbury College. Since 1919 he has been Professor of History. In 1927 he exchanged Chairs for a year with Professor A. J. Grant of the University of Leeds. He was a member of Royal Commissions in 1912 and 1919 and was chairman of the committee of economists appointed to advise the Forbes Government on measures to combat the economic crisis of 1931. He has published a number of books and was advisory editor for the New Zealand volume of the Cambridge History of the British Empire.

INDUSTRIES, TRADE, AGRICULTURE, AND MANUFACTURE. The chief industries of New Zealand are pastoral farming—sheep raising and dairying. The bulk of the Dominion's exports are the products and by-products of these two branches. Secondary industries, i.e. manufactures, have a very important place in the industrial economy of the country, but they play virtually no part in exports. Agriculture, as distinguished from pastoral farming, also plays its part in the internal economy of New Zealand in providing foodstuffs for local consumption, but participates to a very minor degree in respect to exports.

In 1935 (later figures are not available) production was valued at £97,000,000, to which agriculture contributed £7,900,000,

pastoral £28,300,000, dairying, poultry and bees £23,000,000, mining £3,800,000, fisheries £400,000, forestry £2,600,000, factory £20,700,000, building and miscellaneous £10,300,000. Of all production 56 per cent is consumed, or used, locally, and 44 per cent exported. Of the agricultural and pastoral products 69 per cent is exported and 31 per cent consumed locally; of the products of forestry 84 per cent is used in the Dominion and 16 per cent exported; of mining yields 66 per cent is locally used and 34 per cent exported (gold is the chief export in this category) and under the heading "Factory" 99 per cent is local consumption and 1 per cent export. In the above, if "pastoral" production were separated from "agricultural" the proportion of exports to local consumption would be higher than the figure of 69 per cent for the reason that almost all the agricultural produce is consumed locally.

The chief items of the pastoral statistics for the Dominion for 1936 were as follows: Cattle (including dairy cows) 4,254,975; dairy cows 1,951,507; sheep and lambs 30,113,704; pigs 808,463; horses 276,170. The estimated wool production during the seasonal year 1935-36 was 316,500,000 lb.

There were 35,426 electric motors of 43,600 horse-power used on farm holdings in 1936; 22,159 internal combustion engines of 69,297 horse-power, 5710 agricultural tractors of 94,905 horse-power, 26,181 milking plants, milking 1,377,533 cows, 56,199 cream separators; and 8468 sheep shearing plants.

In respect to agriculture as distinct from the pastoral side of farming, 248,639 acres



OXEN HAULING KAURI LOGS ON NORTH ISLAND, NEW ZEALAND



INDUSTRIES

1. Coal mine, Denniston, South Island: here the coal is mined from the top of a mountain. The coal output of New Zealand is about 2,000,000 tons annually. 2. Harpooning a whale off the coast of New Zealand. 3. Gold dredge at work on the west coast of South Island. Sluicing and dredging in the rivers and shallow water off the coast are to-day the principal methods used in the production of gold. 4. Carcasses of beef before export. In 1936, 735,997 cwt. of beef were exported. 5. Butter making in the Waikato Valley Co.'s factory, Frankton. The largest in New Zealand, it has an annual output of over 5,000 tons. 6. Grading and packing passion fruit at Kerikeri. 7. Woolen mill.

High Commissioner for New Zealand



NATURAL RESOURCES

1. Electric power transmission line. Almost the whole of New Zealand is wired for electricity and even remote farms are supplied from the main system. 2. Hydro electric power house and dam on the Wanganui River. 3. Gold miners sluicing with primitive apparatus. 4. Old gum digger of Hohoura. Exports are mainly to America, where the Kauri gum is used in the manufacture of varnishes. The gum is dug from bogs in which the trees have long since decayed.

Photos: High Commissioner for New Zealand

were in wheat in the 1935-36 season, yielding 8,859,223 bushels; 77,502 acres in oats for threshing, yielding 3,302,642 bushels; barley 20,659 acres, yielding 745,380 bushels. In addition there were considerable areas down in maize, peas, rye grass and other grasses for seed, root crops, and the usual other products of agriculture. The average yields per acre for the Dominion were: wheat 35.63 bushels, oats 42.61, and barley 36.08. The area in cultivation of the principal crops is 2,091,392 acres.

Considerable areas, aggregating 134,405 acres, are also devoted to the production of grass and clover seeds, of the yields of some varieties of which a considerable export trade has been built up.

The total area under grass in the Dominion

is 31,738,509 acres. The total number of occupied holdings for farming is 84,549, occupying 43,282,093 acres.

It will be gathered from the statistics of farm machinery quoted above that New Zealand farmers have applied machinery to an exceptional extent to farming. This is particularly so in the dairy industry, and the general efficiency of the industry and the comparatively cheap cost of production and manufacture are largely due to this extensive up-to-date mechanization. Another factor in cheap production is the excellence of the climate which enables animals to graze the year round in the open, obviating the necessity for stall feeding. Co-operation in factory production operates throughout New Zealand, a large proportion



FARMING

1. Dairy farm, near Hamilton, North Island. There are nearly 2,000,000 dairy cows in New Zealand.
2. Sheep muster at Riddiford's, Waikarapa. The 30,113,704 sheep and lambs in New Zealand produce over 316,000,000 lb. of wool annually, and the export value of mutton and lamb is over £10,000,000. 3. Cattle on the shore at Twilight Beach. In the distance is Cape Maria Van Diemen, the most northerly point of North Island.

High Commissioner for New Zealand



AGRICULTURAL AND PASTORAL INDUSTRIES

1. New Zealand flax plant. The fibre of this native plant is extensively used in rope and binder twine manufacture. 2 Sheepbreeding farm. 3. Apple orchard in blossom. The pumice lands in the volcanic area are ideal for apple production. 4. Wheat harvesting in the Marlborough Province, South Island. There are 250,000 acres under wheat in the Dominion. 5 Flax fibre in stacks ready for the factories.

Photos: High Commissioner for New Zealand

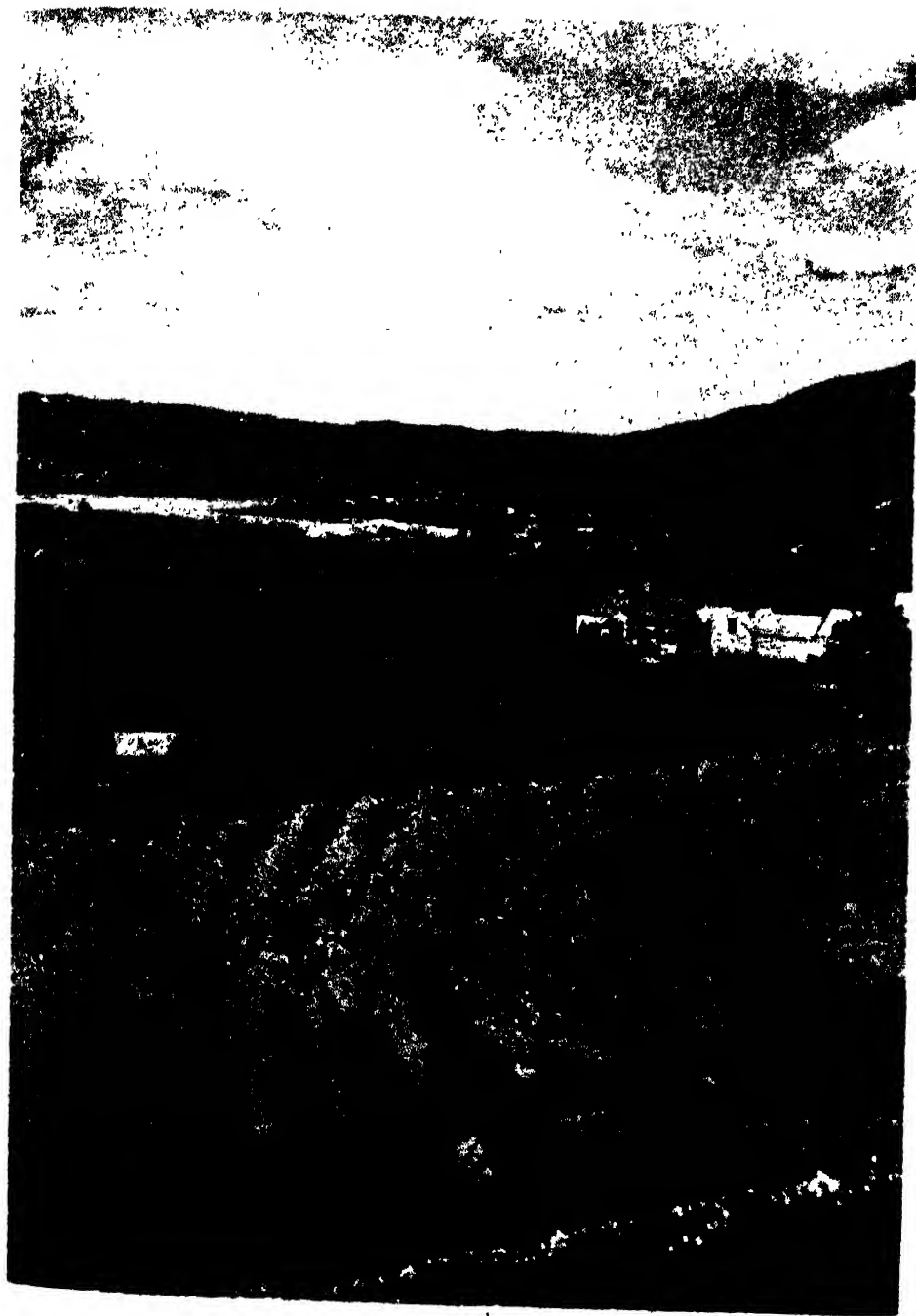
of the butter factories being owned by the farmers themselves. The number of butter factories in New Zealand is 205 and of cheese 275. Forty-two have dual cheese and butter plants.

Sheep shearing is almost entirely done by machinery.

Britain is virtually New Zealand's only market for dairy produce and meat. Since shortly after the World War the marketing of her produce has been in the hands of control boards representing the meat, dairy, honey and fruit industries, the boards being elected by the farmers in the respective branches of farming. They operate under

statutory powers, and have special representatives, or managers, in London. Since 1935, when a Labour Government was elected to power, the dairy industry has come under the direct control of the Government, which has fixed a price to be paid for butter and cheese in *New Zealand*, and has also taken over the direction of sales to agents in Britain. This system is operating satisfactorily. The other boards continue as before.

Factory Production. In 1935 the number of establishments was 5270, the persons engaged numbered 79,358, the salaries paid totalled £13,244,373, and the value of the



STONE FRUIT ORCHARDS, CENTRAL OTAGO

Photo High Commissioner for New Zealand

output was £79,324,473. There has recently been a big increase in trade in coach-building and the motor industry, clothing, saw-milling, joinery, engineering, and brick and tile making.

Overseas Trade. The figures for the chief export commodities for the calendar year 1936 were butter 2,796,145 cwt., value £15,317,576; cheese 1,658,206 cwt., value £5,122,438; beef 735,997 cwt., value £989,847; lamb 2,603,805 cwt., value £9,417,209; mutton 883,844 cwt., value £1,672,522; pork 605,317 cwt., value £1,601,811. Export returns of some of the by-products of these industries were as follows: sausage skins, 4,416,070 lb., value £641,393; sheep-skins (number) 12,627,581, value £1,703,130; tallow 26,095 tons, value £628,310; calf skins and cattle hides (number) 1,608,789, value £761,511.

The value of the total exports for 1936 (in New Zealand currency, the basis of the above figures also) was £56,263,215. Of this trade the United Kingdom took quantities of a value of £45,365,823, the next biggest customer being the U.S.A. £2,831,288, and after her France £1,646,153, Australia £1,619,866, and Canada £1,098,037.

It is interesting to note in regard to these trade statistics the extent to which New Zealand fulfils her obligations in respect to inter-Empire trade. While her exports to Empire countries are 89.77 per cent of the total, her imports from the Empire total 73.31 per cent, and an analysis of her purchases outside the Empire would show they are chiefly goods or commodities which the Empire cannot supply, or in which it cannot compete.

New Zealand in overseas trade, indeed, has some remarkable records, remarkable considering her remoteness from the centres of population and her own comparatively small population of 1,600,000. She is the world's greatest exporting country of dairy produce, of mutton and lamb, and the second largest exporter of wool. She is also Britain's leading supplier of both butter and cheese, of mutton and lamb, and her second supplier of wool. The extent to which she exports other commodities is shown in the figures given above, though it should be stated that she has a valuable apple trade with Britain—to a less degree with other countries—that she invariably obtains the highest import price, and that her honey exports to Britain are considerable.

The disparity in New Zealand's return trade with Britain is sometimes commented upon, viz., that she finds a market in Britain for £45,000,000 worth of produce and buys goods of the value of £22,000,000 (N.Z. currency figures). New Zealand's reply to

that is that she has invisible exports to Britain of an additional £10,000,000 for interest on loans, and of £8,000,000 for shipping freights, which greatly reduces the gap; and under the present policy of her Government the Dominion declares she is quite ready to close the gap with additional purchases if Britain will give her the assurance of a regulated expanding market for her produce, since it is only by additional sales that she will have the wherewithal to increase her purchases. To-day, indeed, New Zealand has the world's highest *per capita* overseas trade figure, and her purchases from Britain alone are £11 os. 5d. per head of population—more than double the figure of any overseas country, except the I.F.S. With foreign countries New Zealand has an export trade of only 10 per cent of her total trade, and an import trade of 26 per cent of the total.

Of the 652 items in the Dominion's Customs tariff 376 enter New Zealand duty free from the United Kingdom, and in respect to these as well as in the case of goods on which Britain does pay a tariff the British manufacturer enjoys a very substantial margin of preference over foreign goods.

INVERCARGILL. The southernmost city of New Zealand, it lies on the New River Estuary on South Island. There is a large import and export trade, but the neighbouring port of Bluff on Bluff Harbour is the point of arrival and departure of trading vessels.

JORDON, WILLIAM JOSEPH (born 1879). High Commissioner for New Zealand since 1936. He was born at Ramsgate, Kent, but his family moved to London when he was a child. He was apprenticed to coach painting, from which he resigned to enter the Postal Service in 1896. Later he joined the Metropolitan Police, but after serving one year he resigned and went overseas, landing in New Zealand in 1904, where he engaged for a time in bush-farming, before starting a business. Mr. Jordan took part in the formation of the New Zealand Labour Party, of which he was the first Secretary in 1907 and National President in 1932. He saw active service in France with the New Zealand forces and was seriously wounded. After the Armistice he was engaged on the educational staff of the New Zealand Expeditionary Force, returning to New Zealand in 1919. He entered the New Zealand Parliament in 1922, and he has represented the same constituency ever since. In 1928 he was selected to represent the New Zealand Parliament at an Empire Parliamentary Conference in Canada.

KAURI. See article, Vol. V.

KERMADEC ISLANDS. See article, Vol. V.
KING, SIR FREDERICK TRUBY, C.M.G. (born 1858). Born in New Plymouth in 1858, he was educated there and at Edinburgh. He was appointed lecturer on Mental Diseases and examiner in Public Health to Otago University in 1888. He became Director-General of the Mental Hospitals Department. For twenty-five years he gave close attention to questions affecting the nutrition and health of women and children. In 1907 he and his wife founded the Royal New Zealand Society for the Health of Women and Children, to which Lord and Lady Plunket devoted themselves throughout the former's term as Governor. Under the name of the Plunket Society this voluntary organization came to exercise an influence far beyond New Zealand, where infant deaths had been almost halved in number. In 1917 Dr. Truby King, at the instance of Lord Plunket and Mr. Evelyn Wrench, established a Mothercraft Training Centre in London and took charge of it for its first year.

LANGSTONE, THE RT. HON. FRANK. Minister of Lands and the Department Touring and Publicity. For many years he was identified with rural Labour movements in New Zealand. He has represented a North Island rural constituency since 1922.

MAORI PEOPLE. "The Maori people have impressed themselves deeply upon the history of New Zealand," writes Dr. J. Hight in his introduction to the New Zealand volume of the *Cambridge History of the British Empire*. "The study of their characteristics, institutions manners and ideals, of the nature and results of their first contact with the white settlers, and of the more recent relations between the two races, invests that history with special interest."

The Maoris came to New Zealand from Polynesia. They inherited a widely spread culture, and their language, or one akin to it, was spoken in Madagascar, the Malay Archipelago, and throughout the island groups of the Pacific. It is believed that the Polynesians came originally from India, migrating thence to Java and afterwards to Samoa and Fiji, but their story is wrapped in mystery. We can, however, surmise with some certainty why the Maori navigators decided to roam southwards in search of lands whose existence they deduced possibly from the flight of migrant birds. Shortage of food was the primary motive. Overpopulation of the islands of Polynesia led to wars and eventually to migrations. Tradition dates the voyage of Kupe and Ngahue, the earliest travellers to New Zealand, at A.D. 900. We know with more certainty

that migration was proceeding about the year 1250, and that the chief migration, that of "The Fleet," occurred about 1350.

Food supply was by no means superabundant in New Zealand, especially after the Maoris had exterminated the *moa* and other flightless birds. The *kumara*, or sweet potato, was the principal vegetable, and the dog the only food animal. The growth of Maori population was controlled by the food scarcity factor, and in pre-European times it probably did not exceed 100,000.

Maori civilization was organized on a clan rather than a family basis. All relations formed a *whanau* or clan, and this might become big enough to form a sub tribe and eventually a tribe. At the head of each tribe was the *ariki*, or supreme chief, whose power, however, was by no means despotic. The office was deeply venerated, but its holder "might do nothing that would offend the feelings of his people." The remainder of the tribe was divided into chieftains and freemen, while there were, outside the tribe, but serving it as slaves, numbers of prisoners of war. The *ariki* directed all the operations of the tribe, including the planting of the *kumara* and the opening of the fishing and fowling seasons. "He decided which forest tree was to be felled for canoe-making," writes H. D. Skinner, "and was responsible for tactics and strategy in warfare, and for the main lines of tribal policy. Nor did he refrain from lighter tasks such as designing the decorative pattern for textiles or suggesting the lines of rafter patterns, or the curves of tattooing. In general, however, he accepted the advice of experts or *tohunga*, craftsmen in different departments, including the dread field of theology. But should he prove indecisive in action or weak in judgment his place would be taken by a worthier."

Maori theology was based on the idea of an ascending series of heavens. These were twelve in number, and in the uppermost of the twelve was the seat of Io, the supreme god of the Maoris, whose name and ritual were so sacred that most Maoris knew nothing of him, having to content themselves with the gods of the heavens below Io.

Fighting was the principal recreation of the Maoris, and they were adepts in military organization and fortification. The *pa* or fort was a feature of every settlement or group of settlements, and successions of stockades of tree trunks formed a formidable barrier to any foe. When the advent of the early whalers and sealers around the New Zealand coasts brought supplies of muskets to the northern tribes, the *pa* held its place as the focus of tribal defence. Even against British artillery in the Maori Wars the

native method of fortification proved a powerful protection.

The arrival of firearms led to a series of great marauding expeditions by those who possessed them. Great chiefs like Hongi and Te Rauparaha spread death and desolation far and wide. Captains of whaling and sealing vessels were often guilty of assisting in these campaigns and of ill-treating Maoris. A fearful vengeance for maltreatment of a Maori chief had been witnessed in 1809

when the "massacre of the *Boyd*" took place in Whangaroa harbour. This incident delayed for a time the missionary enterprise of Samuel Marsden, who had met the young chief Ruatara in Sydney. Marsden, however, went to New Zealand in 1814 and established his mission at the Bay of Islands. The Bay was the chief resort of European and American shipping, and the mission could at first do little more than attempt to offset the enormous harm done by the influence of the whaling crews whose orgies on shore after long voyages introduced many Maoris to habits of drunkenness which were extremely detrimental to their health.

The growing European interest in New Zealand and the scandal of the conduct of visiting crews eventually led to the appointment of Captain William Hobson to proceed to New Zealand and conclude a treaty with the Maoris. With the assistance of James Busby, appointed British Resident some years before, and Henry Williams, the Anglican missionary, Hobson succeeded in his object, though a few of the chiefs were opposed to any cession of sovereignty. The scale was turned in favour of acceptance by an eloquent address from Tamati Waka Nene, a firm friend of the *pakeha* (white man) through many troubled years.

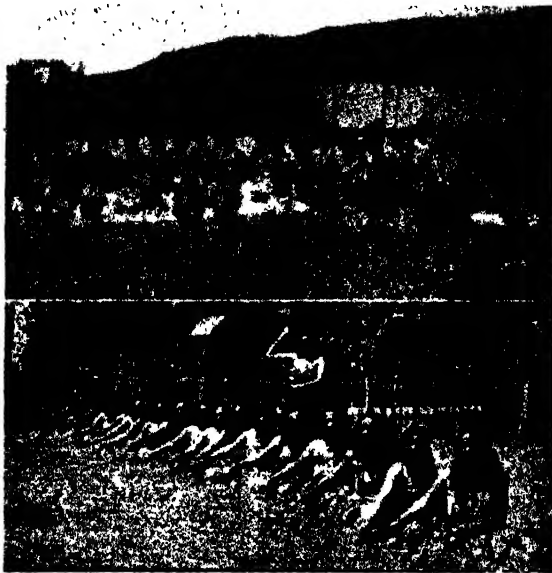
Under this momentous Treaty, which is frequently invoked at the present day, the Maoris ceded the sovereignty over their

lands to the Queen of England, but the Queen confirmed and guaranteed them "the full exclusive and undisputed possession of their lands and estates, forests, fisheries, and other properties which they may collectively or individually possess, so long as it is their wish and desire to retain the same in their possession." The shadow went to the Queen, the substance remained with the Maoris. New Zealand had become a British colony peacefully, by the consent of the native inhabitants.

But the Maoris had not contemplated the wholesale colonization of their country. Their ancestral lands were their dearest possessions, and when the tide of settlement seemed to show no sign of turning, reaction against the white man set in. The first actual conflict was at Wairau, in the South Island, in 1843, when the Maoris obstructed the survey of lands claimed for the New Zealand Company. An expedition to arrest the fierce chief Te Rauparaha was badly

managed by the police magistrate, and it ended in the tragic deaths of Captain Arthur Wakefield and many of the party. These deaths were not avenged, because the expedition was held to have been illegal, but the incident had a sinister effect on the relations of Maori and settler.

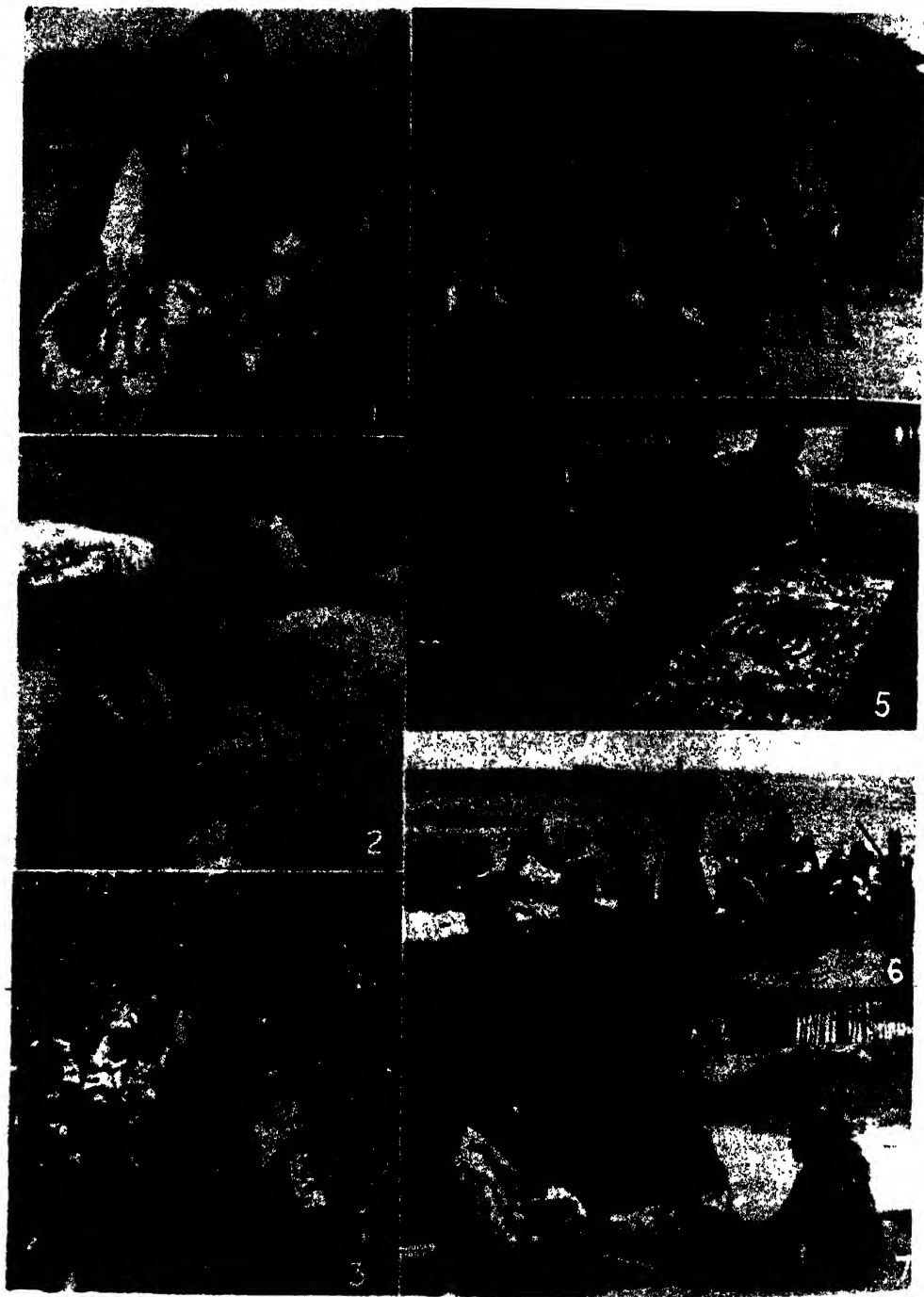
The next centre of disturbance was in the North, and land was again the source of the trouble. Hone Heke, an ambitious Ngapuhi chief, began to question certain interpretations of the Treaty of Waitangi. Raids on Kōrorareka and the cutting down of the flagstaff there, led to a war in which the Maoris showed themselves brave and resourceful. The British troops suffered heavily before they captured Ohāewai, and it was only the vigorous policy of the newly arrived Governor Grey which brought about a settlement of disputes, without confiscation of land to embitter future relations. The first Maori War ended in 1846.



MAORI DANCING

Top: Haka or War Dance. Bottom: Poi, a woman's dance.

Photos: High Commissioner for New Zealand



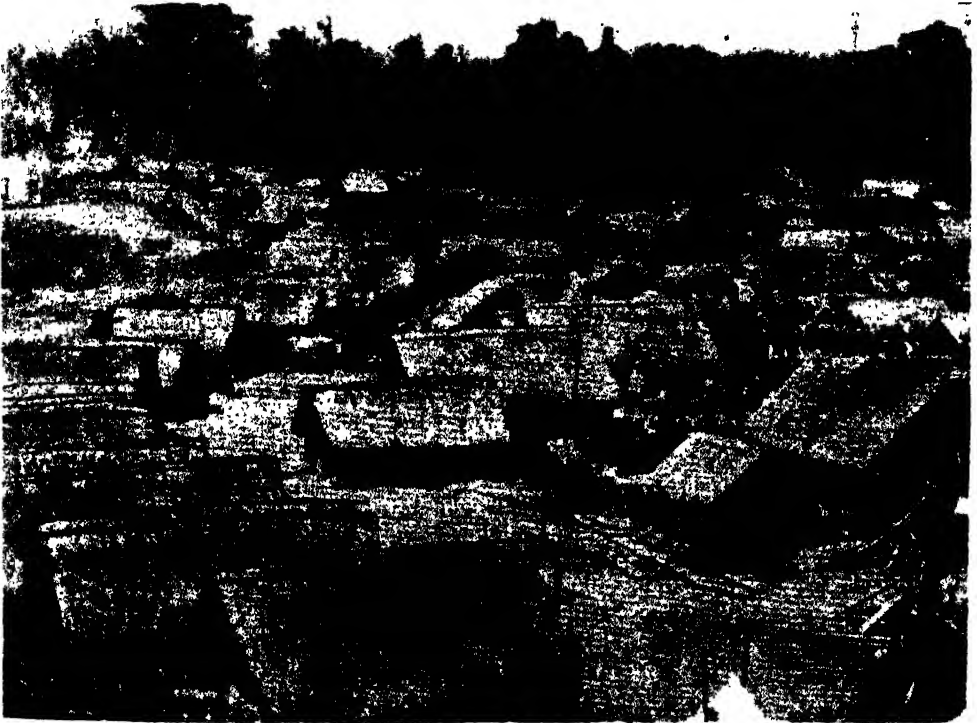
MAORI PEOPLE

1. Preparing flax for weaving. It is beaten between stones to separate the fibres. 2. Maori girls in a warm pool at Rotorua. 3. Canoe being made by hollowing out a tree trunk. 4. Maori greeting. 5. Maori woodcarver at work. In spite of a stylized form, the Maori art has beauty and vitality. 6. Maori acting a war raid. Before the actual attack it was customary for the Maori to try to strike terror into their enemies by fearful grimaces and gestures. 7. The "Moko," or tattooing. At one time it was common for a Maori to have his face tattooed all over.

Photos: High Commissioner for New Zealand; Cherry Kearton

By 1860, when war broke out in Taranaki, the European population had more than doubled and exceeded that of the Maoris, which was estimated to be about 56,000 in 1858. The trouble in Taranaki was again about land. The settlers could not get enough of it for their wants, and the Maoris formed a Land League to prevent further sales to them. The immediate cause of the outbreak of hostilities was the acceptance

movement became merged in a wider nationalist movement to set up a King for the Maoris. The King party at first did not prevail, but it was not long before it became the focus of Maori resistance to the white man. To overcome this resistance there were at one time in the field no less than 22,000 Imperial and colonial troops. Though it is believed that the Maori forces at no time exceeded 2000 fighting men, they



MAORI PĀ (VILLAGE) AT PARIHAKA
Photo: High Commissioner for New Zealand

by the Governor, Colonel T. Gore Browne, of land offered for sale by a chief, Te Teira, whose title to the land in question was disputed by Wiremu Kingi. The military authorities seem to have been at fault in precipitately declaring martial law, when the Government surveyors were hindered in their work by a number of old Maori women, and the translation of the proclamation of martial law into Maori offered difficulties which were not completely overcome. To tell the Maoris that "the law of fighting" was to rule was to place too strong a temptation in front of them. But, whatever the immediate cause of the war, it seems clear that the ultimate cause was the determination of a section of the Maoris to arrest the tide of colonization. The Land League

understood so well the principles of guerilla warfare that the problem of defeating them proved a serious one, even for generals with brilliant records in other wars. The Maoris were helped, not only by their position in the centre of the island and their knowledge of the country, but also by the division of authority between Sir George Grey and Sir Duncan Cameron and by the acute personal differences which developed later. The confiscation of huge tracts of land from "rebel" Maoris by the local Government produced, as was foreseen by the Imperial Government, a grim determination on the part of the Maoris to maintain the struggle. The growth of the fanatical religion called Hauhauism, a recrudescence of cannibalism, and the vengeful campaigns of Te Kooti

may all be ascribed in some measure to the state of desperation produced by what was thought to be unjust treatment. The Maoris were never conquered, though they were at last induced to refrain from hostilities.

After the wars many of them retired to the King Country, which was for a long period closed to white men. A pessimistic attitude about the future of the race was now common among the chiefs and it was confidently predicted by many observers that it was doomed to die. The rise of the Young Maori movement within the race itself and the sympathetic help of white friends has brought about a remarkable transformation in recent years. A land settlement policy has been pursued with considerable success and the race has begun to increase in numbers, more so relatively than the white population. There is much still to be done, notably in adapting educational methods to the needs of Maori children and in ensuring that their teachers have a knowledge of the Maori language. There were, at the end of 1935, 138 Maori village schools, with about 7000 pupils. Instruction was solely through the medium of English.

At the census in March, 1936, the Maori population, including half-castes, was 82,326, of whom 79,097 were in the North Island. The total Maori population in 1926 was 63,670.

MARTIN, THE RT. HON. WILLIAM LEE (born 1870). New Zealand Minister of Agriculture. In Parliament he represents the constituency of Raglan, which is in a farming district. He was born in Oamaru and was educated at Waimate High School and the Christchurch Normal School. He has been an officer in the Salvation Army and a local preacher of the Methodist Church. He joined the Labour movement in Wanganui in 1902. He served a long apprenticeship on local bodies and various societies, and in 1926 and 1927 was president of the Waikato branch of the Farmers' Union and a member of the Auckland Provincial Executive.

MASON, THE RT. HON. HENRY GREAT-HEAD REX (born 1885). Attorney-General and Minister of Justice in the New Zealand Government. He was born in Wellington and was educated at Wellington College (N.Z.) and the Victoria College University. He studied law and qualified both as barrister and solicitor. He has been a Member of Parliament since 1926.

MCKENZIE, SIR JOHN. See article, Vol. V.

MOA. See article, Vol. V.

NAPIER. An important town on Hawkes Bay on the east coast of North Island. It has a population (1936) of 18,689. Napier

is important for the export of meat and wool and the most important industries are connected with the export trade. They include wool washing works and freezing factories.

NASH, THE RT. HON. WALTER. New Zealand Minister of Finance and Minister of Marketing. Born and educated in Kidderminster; for three years he served in a legal office in that town. When a youth he left Kidderminster to join a firm of cycle manufacturers in Birmingham, where later he began business on his own account. In 1909 he decided to emigrate to New Zealand to represent a number of English manufacturers. He was engaged in business for some years before impulses in the direction of social betterment led him to devote his entire attention to politics. In 1922 he became Secretary of the New Zealand Labour Party, and in the succeeding years attended conferences overseas to deal with such problems as workers' conditions, international affairs, Pacific trade and population, and Dominion relations. From 1935 to 1936 he was National President of the New Zealand Labour Party. He was elected to Parliament in 1929. In 1935 he was appointed Minister of Finance and Customs, and in 1936 he was also appointed Minister of Marketing. He came to London in 1936 to represent New Zealand on a special trade mission and remained to be associated with the Prime Minister at the Coronation and Imperial Conference.

NAURU. See article, Vol. VI.

NELSON. Founded in 1842 by the New Zealand Company, Nelson is now a port with a considerable import and export trade. Situated as Tasman Bay at the northern end of South Island, it is the natural market of the sunny district near, which, beside its extensive dairying industry and sheep and cattle raising, is noted for its hops and fruit. There are extensive mineral resources, including coal and iron nearby. Population (1936) 13,571.

NEW PLYMOUTH. A municipality on the west coast of North Island, New Plymouth is picturesquely situated at the base of Mount Egmont. It has a population of 18,503 (1936). New Plymouth was founded when colonists sent by the Plymouth Company of New Zealand, later merged with the New Zealand Company of London, landed in 1841. During the Maori troubles the colony suffered serious reverses, but it has made rapid progress in recent years.

NGATA, SIR APIRANA, M.P. (born 1874). A Maori, he was born at Kawakawa, East Coast, and educated at Te Aute College and Canterbury University College, where he won many honours and graduated M.A., LL.B.



NEW PLYMOUTH FROM WESTLAND PARK

Photo High Commissioner for New Zealand

He was admitted as a barrister and solicitor in 1897 and two years later became travelling secretary of the Young Maori Party. He initiated many reforms in Maori methods of living. In 1905 he became M.P. for the Eastern Maori Division and was associated with nearly all movements of interest to the Maori race. He was knighted in 1927. He became Native Minister in 1928 and held that portfolio until he resigned after the report of the Native Affairs Commission in 1934. His personal integrity was not affected and he emphasized his intention to work for his people "until he dropped."

NEW ZEALAND, HISTORY AND GENERAL. See article, Vol. VI.

PALMERSTON NORTH. The largest inland town of New Zealand, it is situated on North Island, 87 miles from Wellington. Palmerston North is an important distributing centre for the fertile farming area in which it is situated. It has many industries which supply local needs. The population is 23,954 (1936).

PARR, THE RT. HON. SIR JAMES, GCM.G. (born 1869). He succeeded Sir James Allen as High Commissioner in London in 1926, and held that office until 1930 and again from 1933 to 1936. In the latter period there were long and difficult negotiations with the British Government on produce quota problems. Sir James was born at Cambridge, Waikato, and was educated at Auckland Grammar School and Auckland University College. He was admitted as a barrister in 1890 and practised in Auckland for thirty years. He was Mayor of that city from 1911 to 1915 and M.P. for

Eden from 1912 to 1926. He became Minister of Education and Health in 1920, relinquishing the latter portfolio for that of Justice and the Postmaster-Generalship in 1924. Between his two terms as High Commissioner he was for a time Leader of the Legislative Council.

PARRY, THE RT. HON. WILLIAM EDWARD. Minister for Internal Affairs, he has represented Auckland Central since 1919. He was born at Orange, New South Wales, and was a miner in early life. He arrived in New Zealand in 1900 and became President of the Waihi Miners' Union.

PHYSICAL FEATURES, RESOURCES, CLIMATE, GEOLOGY. The total area of New Zealand is 103,415 sq. miles. A number of islands in the South Pacific, of a total area of 293 sq. miles, have been annexed to New Zealand at different dates at the request of the British Government. The chief of these is the Cook group, and the Kermadecs. By mandate of the League of Nations, New Zealand controls and administers Western Samoa. There is vested in her also by the British Government the administration of the Ross Sea Dependency.

New Zealand proper consists of the North and South and Stewart Islands. The group runs approximately 1000 miles due north and south.

The mountainous nature of New Zealand is one of its most striking physical characteristics, and yet it has great tracts of fertile foothills and lowlands everywhere, accommodating sheep and cattle in such numbers as to enable the Dominion to place herself in the forefront of world exporting countries

of dairy produce, lamb and mutton and wool. In the North Island the higher mountains occupy approximately one-tenth of the surface, but with the exception of the group in the centre of the island—Ruapehu 9175 ft., Ngauruhoe 7515 ft., and Tongariro 6458 ft.—and Egmont, on the most westerly cape, 8260 ft.—they do not exceed an altitude of 6000 ft. The South Island has more mountainous country than the North. Along almost its entire length runs the mighty chain known as the Southern Alps. No fewer than 17 peaks are over 10,000 ft. in altitude, Mount Cook (12,349 ft.) being the highest. Owing to the snow line being low, many large and beautiful glaciers exist in these mountain ranges, the most famous of them the Tasman (over 18 miles long and a mile wide), the Fox, and the Franz Josef.

In the extreme south-west the mountainous nature of the country continues to the coastline, and magnificent fjords have been formed for mile after mile with deep, navigable, sheltered sea channels and bush-clad heights rising sheer out of the sea for hundreds, and in some cases, thousands of feet.

Rivers. New Zealand has many rivers of considerable size, most of them taking their rise in the mountain ranges and being snow-fed. Few of them are navigable and

most of them are swift running. They themselves, their numerous tributaries, and many small streams, provide pure water supplies for the grazing stock, and some of the largest of them have been harnessed by State enterprise, to generate electricity for the whole Dominion. The largest of the North Island rivers are the Waikato (in the Auckland province) 220 miles long, the Wanganui 140 miles, the Rangitikei 115 miles, the Manawatu 100 miles, and the Wairoa 95 miles. In the South Island are the Clutha 210 miles long, largest of New Zealand rivers, the Waitaki 135 miles, the Taieri 125 miles, the Clarence 125 miles, the Mataura 120 miles, the Buller 105 miles, and many others.

Lakes. There are numerous large and beautiful lakes in New Zealand. The most beautiful and the most notable are those in the mountain fastnesses in the lower centre of the South Island. There are a number of these, but the largest are Te Anau, Wakatipu, Wanaka, Hawea, Mānapouri. Smaller, yet very picturesque lakes, are found on the west coast of the South Island, some especially noted for their pellucid reflections. In the North Island is Lake Taupo, the largest of New Zealand lakes, 238 sq. miles, and others are Waikaremoana, Rotorua, Rototoi, and, near Wellington, the Wairarapa Lake



WHITE CLIFFS, NEAR NEW PLYMOUTH
A scene of quiet beauty suggestive of England.
Photo: High Commissioner for New Zealand



MOUNT ROON FROM THE MAIN SOUTH ROAD, SOUTH ISLAND

Photo: High Commissioner for New Zealand

The Thermal Region. Perhaps the outstanding physical feature of New Zealand is the thermal or volcanic region in the North Island, a strip running approximately N.N. East and S.S. West from White Island off the coast of the North Island (on the west of longitude 177) down to Mount Ruapehu in the centre of the island, a distance of about 130 miles, and having a varying width at no time greater than 30 miles. In this area Nature displays in a variety of forms—in geysers, boiling springs, seething mud, hissing steam vents almost everywhere, hot earth, and weird volcanic noises—the forces pent up in the earth's interior, in this instance very near the surface. The degree of the exhibition varies over the area, and is more concentrated in particular localities, in such places as Wairakei, Tikitere, Waimungu, Whakarewarewa (near the town of Rotorua), Waitapu, Taupo, and elsewhere. These are really fearsome places. All, naturally, are favoured of tourists anxious to see "the sights."

It is not only in this area, known generally as The Rotorua (from the town and famous spa situated in its centre) that New Zealand exhibits evidence of thermal influence. There are hot mineral springs in various parts of

the Dominion, the most notable, outside the Rotorua area, being those at Te Aroha, Helensville, Morere, Kamo, Okoroire, in the North Island, and Hanmer in the South Island. At all these places there are modern spa establishments.

Natural Resources. New Zealand is rich in her natural resources. Her greatest endowment at present, situated as she is so far from the world's centres of population and with a comparatively small population, is her pastoral productiveness, and her climate—a natural fertility, which with the aid of refrigeration, enables her to invest abroad—chiefly in Britain—the proceeds of her pasture lands—her dairy produce, mutton and lamb, wool, beef, and the by-products of these industries. She has also great resources of minerals, water power for the generation of electricity, and exceptional fertility of soil for the growth of cereals and agricultural products, though these products cannot be exported to financial advantage because of the costs of freights over the great distance to populous centres, and of which, with the limited internal consumption, production necessarily remains limited.

What the natural resources of the country are, apart from the pastoral and agricultural

industries which are dealt with in another article, may be gathered from the following facts.

Coal, varying in grade from anthracite to lignite, occurs in many parts of New Zealand. An estimate of the *proved* coal resources, prepared in 1927, is as follows (in millions of tons): bituminous 206, semi-bituminous 60, brown 247, lignite 150, anthracite very little; total 663,000,000 tons. The *probable* resources are officially given as 1,631,000,000 tons. The total coal output per year is approximately 2,000,000 tons, so that, on

several times such as are served at present. In the North Island there are three main stations (and it should be stated that in both the North and South Islands, the schemes are inter-connected): Mangahao (Wellington), Lake Waikaremoana (Hawke Bay and Poverty Bay), and Arapuni, giving 164,000 horse-power but capable of extension to 324,000 horse-power. In the South Island the main stations are Lake Coleridge (North Canterbury), Waitaki (South Canterbury), and Waipori and Lake Monowai (Otago). A number of small generating



BOULDERS WORN BY THE ACTION OF THE SEA ON NORTH ISLAND
Photo: High Commissioner for New Zealand

the present scale of consumption, New Zealand has coal supplies to last her (on the proven supplies alone) over 300 years. The probability is that her hydro-electrical supplies will, in the future, supply the main industrial needs.

Hydro-electrical supply may therefore be considered as a natural resource. Considered as such it is one of the Dominion's greatest natural assets, since it is virtually a State monopoly, undertaken, established, and developed by the State.

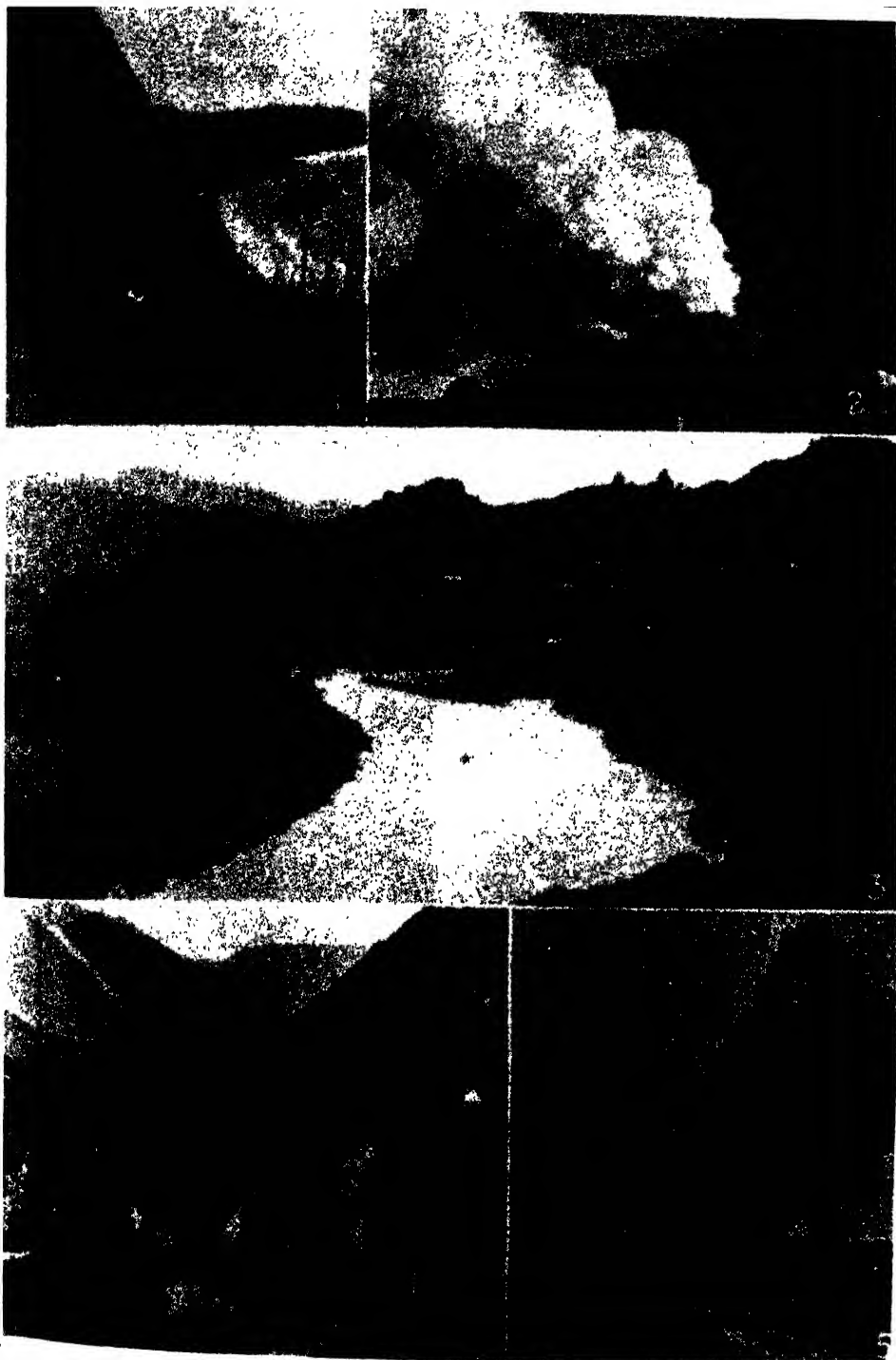
At the present time the Government has £13,095,382 invested in the system in capital outlay, chiefly in head works; but the country itself, through the various district electric power boards, which control reticulation and supply, has had a capital expenditure (including the amount stated above) of £34,036,936. The provision is sufficient for a population and industries

stations also exist. To-day, almost the whole of New Zealand is wired for electricity, and even remote farms have their supplies at a comparatively cheap cost.

Gold is another of New Zealand's resources. Since 1853 to December, 1935, £100,000,000 has been produced. Output continues steadily from year to year by means of sluicing, dredging, quartz-mining, and prospecting. A certain amount of silver is also found in New Zealand.

Iron ore deposits are plentiful. They occur chiefly in the Nelson province (South Island), where it is estimated there exist 64,000,000 metric tons. Tests have shown that the ore is exceptionally good. Iron sand is available in great quantities on the Taranaki coasts (on the west of the North Island).

There is also present in New Zealand tungsten ore, copper, cinnabar, tin, and



NEW ZEALAND

1. Mount Maungahiko and Bay. 2. Crater of volcano near Lake Taupo. 3. In the upper reaches of the Wanganui River. 4. Otira Gorge in the Southern Alps. It provided one of Nature's most difficult problems to road engineers. 5. The Main South Road from Christchurch to Dunedin, a fit subject for the brush of Hobbema.

Photos: High Commissioner for New Zealand

platinum, though none of these minerals have so far been found in any great quantities. Petroleum undoubtedly exists in the Dominion, but up to the present yields have been disappointing.

Kauri gum, a resin from the Kauri tree, has yielded a steady export in the past (it is used for varnishes and linoleum manufacture) but quantities must be expected to diminish. The native plant *Phormium Tenax* (New Zealand flax plant) in the past was a valuable resource. It still is, and with the adaptation of the fibre to the manufacture of wool bales its cultivation and fibre output should greatly develop. It is used extensively for rope and binder twine manufacture.

New Zealand possesses a great variety of building stones, handsome and durable. Coromandel granite (Auckland province) is a hard crystalline rock capable of taking a fine polish. There are other fine building stone deposits in various other parts of the Dominion, the well-known Oamaru stone being very extensively used.

Considerable supplies of native timber still exists in the Dominion. Largely exported in the past, especially the Kauri pine, there is a strong tendency now to have what resources remain kept for internal use.

Geology. The geological history of New Zealand is as complex and as ancient as that of a continent. Land, though from age to age it varied greatly in area, outline and elevation, must have persisted in New Zealand area from the oldest Palaeozoic or earlier. The soils on which the forests, pastures and crops grow are of post-Tertiary age. The oldest known fossiliferous rocks are the Ordovician slates and greywackes of west Nelson and south-west Otago. Above the fossil-bearing beds are black phyllites, quartzites, and marbles which outcrop continuously from Takaka to Mount Owen and elsewhere in the same region. Different authorities assign the mica, chlorite, and quartz schists of central Otago to ages that range from the Archaean to the Triassic. Tertiary rocks form the greater part of the North Island and are widely distributed in the South. Eocene rocks are also found in various parts. Miocene strata cover large areas of both islands. Of the Plutonic rocks, granite is the most prominent. These are only a few features of New Zealand's geology.

Climate. The climate of New Zealand may be described as equable. The islands are wholly within the temperate zone. Naturally, as the country runs about 1000 miles north and south, there is a variation in the different parts. The mountain ranges and the prevailing winds naturally also

play their part. Generally speaking, there is more rain on the west coasts of both islands than on the east, since the prevailing winds come in from the west and are caught by the mountain ranges. Little fog and mist are experienced in New Zealand, and at almost all times there is a clear distant



NATIVE FLOWERS

Top: Mount Cook Lily (*Ranunculus lyalli*)
Centre: Koromiko. Bottom: New Zealand
Mountain Daisy (*Celmisia*).

Photos: High Commissioner for New Zealand

horizon. There is an abundance of sunshine, the daily average being six hours, while at Wellington in the centre of the Dominion the mean daily maximum average temperature in 1936 was 61.3 degrees.

PLANT AND ANIMAL LIFE. The flora of New Zealand is evergreen. Therefore, the year round, the native bush presents the same dark green appearance. As all the native trees are of slow growth, English

**NATIVE TREES**

1. Rimu, a native timber tree, this specimen is 60 ft. high and has a girth of 6 ft. 2. Kauri, a native conifer, the most valuable timber tree in New Zealand. This fine specimen is 150 ft. by 18 ft. 3. White Pine. Though much depleted, the white pine still provides much of the finest timber. This specimen is 100 ft. by 18 ft.

Photos. High Commissioner for New Zealand

trees and firs have been introduced for ornamental purposes in cities and towns, and firs, generally, for re-afforestation, so that to-day the visitor who travels little beyond the cities and towns does not see a great deal of the native flora.

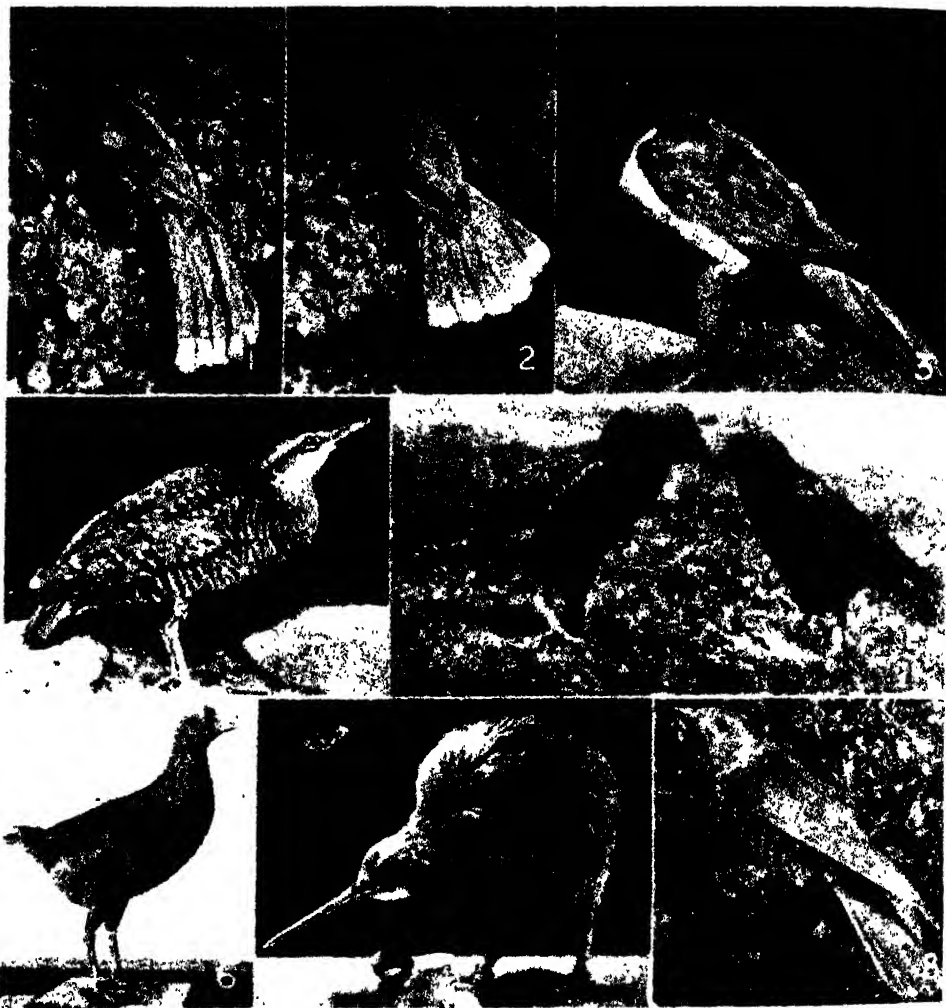
New Zealand, however, has a very distinctive flora. Certain of the flowering varieties, conifers, ferns, lycopods, show affinity directly or indirectly with plants of the Malayan region. It is claimed by the present Director of the Dominion Museum that the presence of this element is justifica-

tion for stating that the basis of the New Zealand flora is Malayan, and that it got there by some ancient land connection. Another important element in the flora might be described as Australian, as it includes species either identical with or related to those found in Australia or Tasmania. Another element is known as Antarctic. In general terms there is exhibited in the New Zealand flora what one authority describes as a high degree of "endemism": great development of certain genera such as *Koromikos* (*Hebe*) *Karamus* (*Coprosma*),

**TUATARA**

The only native New Zealand reptile.

Photo. High Commissioner for New Zealand



NATIVE BIRDS

1. Male Huia. 2. Female Huia. 3. Pigeon. 4. Pectoral Rail. 5. Keas or Green Mountain Parrots. They are known to kill sheep. 6. Pukeko or Swamp Rail. 7. Kiwi, a flightless bird. 8. Shining Cuckoo.

Photos. High Commissioner for New Zealand.

Wild Spaniards (*Aciphylla*), Daisy trees (*Olearia*), Mountain Daisies (*Celmisia*), and native brooms (*Cormichaelia*); an absence, or poor development, of many of the largest genera of plants, although some are highly developed in Australia, and the traces of species related to those of South America and southern ocean islands.

In this brief review one may mention particularly the kauri tree, found in the northern part of New Zealand. It is said to be the largest timber-producing tree in the world, has a grain not unlike that of cedar, and is reputed to take over 1000 years to reach maturity. It has a straight bole up

to 80 ft. or more, and carries an immense rounded head of dark-green shining leaves. It produces a resin of value in the manufacture of varnishes and linoleums. New Zealand has many other magnificent trees, the rimu, rata, totara, matai, miro, tawā, kahikatea, puxutea, varieties of beech, and many others—all producing valuable timber.

Ferns are the glory of the New Zealand bush (or forest). They may, in great variety, clothe the ground and the tree trunks, or as tree ferns take a part in the upper canopy of foliage. There are 145 species in New Zealand. The fern frond is the national emblem of New Zealand. The nikau palm,



NIKAU PALMS

Photo. High Commissioner for New Zealand

resembling a tropical palm, found only in New Zealand, is also a feature of the bush.

The pohutukawa, a red-flowering tree, known as the Christmas tree because it blossoms in December—like the rata—is a feature of the more northern bush.

New Zealand has virtually no native fauna. Its only land-mammals are two varieties of bats. It has distinctive birds, some of which are flightless, such as the kiwi, weka, takahe, and others; the kea, tui, bell-bird, kaka, wood pigeon, kakapo, pukaka and a number of others especially of the smaller variety. The moa, a flightless bird, which stood sometimes 12 ft. high, belongs to the past, as also does now the huia, whose white-tipped tail feathers were prized by Maori chiefs for their head-dress adornment.



SKELETON OF MOA

A flightless bird native to New Zealand, the Moa became extinct from five to seven centuries ago. The tallest species stood 12 ft. high.

Photo High Commissioner for New Zealand

RELIGION. Missionaries of different denominations had a profound influence on the early history of New Zealand. The first sermon was preached on Christmas Day, 1814, when Samuel Marsden spoke to a Maori congregation. He was instrumental in founding an Anglican mission, which, though at first unfortunate in the selection of some of its workers, acquired a very considerable influence in turning the Maoris from savage customs. Methodist and Roman Catholic missionaries were also in the field before the country became British, and the rivalry of the various churches was not without its effect on the Maori mind. If the white man decided his own religion, the Maori saw no reason why he should not decide his. One result was the rise during the Maori War

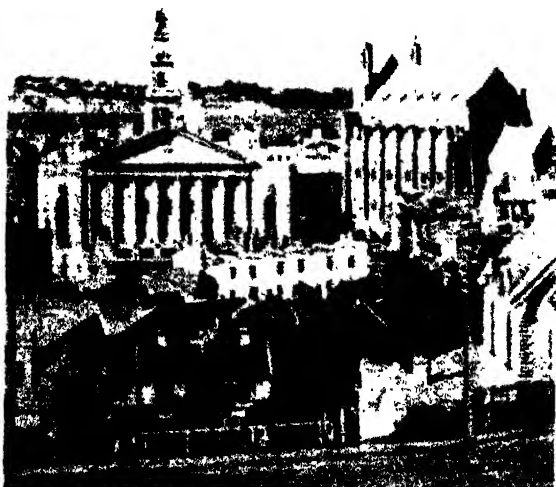
of fanatical sects, whose teachings were based on Scripture. Some of these sects flourish at the present day.

In 1935 of 12,187 marriages registered in New Zealand, Church of England clergymen officiated at 3177, Presbyterians at 3265, Methodists at 1271, and Roman Catholics at 1389, while 2062 marriages were celebrated before Registrars.

These figures may be compared with those for 1931: Marriages, 9817; Church of England, 2535; Presbyterians, 2524; Methodists, 941; Roman Catholics, 1053; before Registrars, 2221.

The large number of churches with members in New Zealand is shown by the following list of the numbers of officiating Ministers under the Marriage Act—

Church of England	464
Presbyterian	436
Roman Catholic	360
Methodist	293
Salvation Army	110
Baptists	72
Associated Churches of Christ	34
Congregational Independents	33
Brethren	20
Seventh Day Adventists	13
Latter Day Saints	17
Lutheran Church	2
Evangelical Lutheran Concordia Conference	4
British Israel Church	7
Churches of Christ	4
Hebrew Congregations	4
Catholic Apostolic Church	2
Liberal Catholic Church	7
Unitarians	4
Assemblies of God	14
Spiritualist	8
Others	30



TOWN HALL AND CATHEDRAL, DUNEDIN

Photo High Commissioner for New Zealand



RELIGION IN NEW ZEALAND

1. Christ Church, Russell, Bay of Islands. Built in 1835-36, it was the first church in New Zealand. During the Maori rebellion of 1845 it served as a fort. 2. Maori Church, Ohinemutu, on Lake Rotorua. Many Maoris have made religions of their own interpretation of the Bible. 3. Anglican Cathedral, Christchurch. Members of the Church of England comprise 42 per cent of the population.

Photos: High Commissioner for New Zealand

In addition there are the following ministers of Maori denominations—

Ratana Church	143
Ringatu Church	44
Church of the Seven Rules of Jehovah	2

The proportion of adherents of the main denominations is roughly: Church of England, 42 per cent; Presbyterian, 24 per cent; Roman Catholic, 14 per cent; Methodist, 10 per cent. Canterbury was originally a Church of England, and Otago a Free Church of Scotland settlement.

New Zealand has no "Established" Church. The question of Bible instruction in schools has given rise to much controversy. There are a number of church schools maintained by the principal denominations.

ROSS DEPENDENCY. See article, Vol. VII.

RUSSELL, MAJOR-GENERAL SIR ANDREW HAMILTON (born 1868). Born in New Zealand, he was educated in England at Harrow and Sandhurst, and on returning to New Zealand took up sheep-farming, on his father's estate. Always a keen soldier,

General Russell in 1907 was gazetted major of the 4th Wellington East Coast Mounted Rifles, and brigade commander in 1911. He volunteered for service at the outbreak of war, and was given command of the New Zealand Mounted Brigade in Gallipoli in 1914, receiving the appointment of G.O.C. New Zealand Division in 1915 when the New Zealand troops were transported from Gallipoli to France. In 1922 General Russell unsuccessfully contested the Hawkes Bay division in the House of Representatives. For years he was President of the New Zealand and Returned Soldiers' Association, retiring in 1936.

RUTHERFORD, SIR JAMES See article, Vol. VII.

SAVAGE, THE RT. HON. MICHAEL JOSEPH. Prime Minister of New Zealand since 1935. He was born at Benalla, Victoria (Australia), and worked as a miner in that country before going to New Zealand in 1907. His interest in social reform was shown early on by his work for the co-operative movement. Later, he became active

in the Labour movement, and in 1919 he was elected to the House of Representatives for Auckland West, a constituency he has represented ever since. On the death of the then leader of his party, Mr. Harry Holland, Mr. Savage was elected to succeed him. Since assuming the Premiership he has succeeded in having passed many important measures. He represented New Zealand, as Prime Minister, at the Coronation and the Imperial Conference in 1937.

SEMPLE, THE RT. HON. ROBERT (born 1873). Minister for Labour. He was born at Sofala, New South Wales, in 1873. He worked for twenty-six years on the gold-fields of Australia and became associated with the Trade Union Movement in that and other Australian States. He arrived in New Zealand in 1893 and took up mining on the West Coast, associating himself prominently with the New Zealand Labour movement. For a time he was engaged in co-operative tunnelling work, accepting contracts at Otira and Wellington, and showed great ability in carrying through his contracts. He was elected Labour Member for a Wellington seat in 1918, but was afterwards defeated. He was then appointed organizer for the Co-operative New Zealand Labour Party. Since 1928 he has been a Member of Parliament for Wellington East and has served on the Wellington City Council.

SOCIAL AND POLITICAL ORGANIZATION AND FINANCE. It is difficult to realize that slightly less than a century ago New Zealand was under the sway of warlike savages, that adventurous settlers were then seeking a precarious foothold on her bush-clad shores. It is a romance of British colonization that in the intervening years this distant country has arisen from savage darkness to the position it now holds in world and Empire trade, and affairs.

In the founding of the British dominions and colonies a different story has to be told in respect to each, and New Zealand had no early problems of convict-settlement aftermaths with which to grapple. She was settled under a more or less definite plan by Britons, who, besides seeking new homes and perhaps wealth in distant climes, and therein gratifying a natural British spirit of adventure, were also sustained with an ambition of establishing a civilization along lines they had found impossible to achieve in older Britain. The period was the dawn of social and civic awakening. Many of the earliest New Zealand settlers, going there in small sailing ships in 1840 (and subsequently), were men and women of considerable culture. It is to this high degree of culture in her first settlers that New Zealand

owes much of her rapid advance in political, social, and civic affairs. It explains why New Zealand to-day is so typically "British," why her public life has been exceptionally "clean"; it accounts for her loyalty to the British throne, and British traditions—for the virility, shrewd enterprise, and industrious character of her men, and for the country's calm political outlook upon public affairs. Doctrinaires have not flourished, and do not flourish, in New Zealand.

Political. The government of New Zealand was first vested in a Governor who, on the lines of British colonization in those days, was responsible only to the Crown. There was an Executive Council with advisory powers only, as well as a legislative Council. In 1852 the Imperial Parliament, by Act, granted representative institutions to the colony—a House of Representatives and a Legislative Council—the political institutions by which New Zealand is governed to-day.

But it was not until 1856 that the system of Executive Ministers, responsible to Parliament only, was instituted. Before this the islands were divided politically into provincial governments, of which there were nine, and this form of administration, under the central government, continued until 1876, when they were abolished by an Act of Parliament (local), but the districts were recreated as provinces, and as such they exist to-day. In the earlier stages these provinces were presided over by an elected superintendent, with an elective provincial council empowered to legislate except on certain subjects. The election was on a virtual household suffrage. To-day the provinces have no direct political significance or powers any more than do the counties of Great Britain. Local government on much the same lines as in Britain was instituted in the earliest days.

Wellington was created a borough in 1842, under the Municipal Corporations Ordinance of that year. The Ordinance was disallowed by the Imperial Government, but such was the demeanour of the early New Zealand settlers that, with certain alterations, it was re-enacted the following year by permission of the Imperial Government. Gradually the more important towns adopted the status of boroughs, counties, town districts, road and highway districts were formed, and the franchise, in regard to each, followed generally the Parliamentary franchise. The chief towns ceased to be boroughs and were given the status of cities.

To-day New Zealand as a Dominion—the third Dominion in precedence or status—has a Governor-General as the direct representative of His Majesty the King, an elected House of Representatives (with



THE GROWTH OF NEW ZEALAND

1. Cook Memorial, Marlborough, South Island, marking Captain Cook's landing place on 15th January, 1770. 2. Surf boat after landing early settlers at New Plymouth. 3. Monument and Hall marking the site of the Treaty of Waitangi. 4. Kemp's House at Kerikeri, Bay of Islands, the first wooden house in New Zealand.

Photos: High Commissioner for New Zealand

eighty members, four of whom are elected by the Maori race) and a Legislative Council, consisting of members appointed by the Government. The Legislative Council follows as nearly as possible the House of Lords. It cannot initiate or veto, or alter, money Bills. The Parliamentary term for many years has been three years; it was extended to four years by the late Forbes-Coates Government, though the Savage (Labour) Government, which has been in power since 1935, has, according to election pledge, reduced the period again to three years.

The Parliamentary franchise in New Zealand is adult suffrage for both sexes. For men this has existed since 1889, and for women since 1893. The qualifications for registration are the same in respect to both sexes. In the case of cities and boroughs the Mayors are elected not by the Councillors, but by a separate vote of the people at the same time that the Councillors are elected.

There are certain political and social avenues along which New Zealand has

advanced, and even experimented, ahead of the times, though subsequent events, and especially in some instances the adoption of similar reforms by other, older, countries, including Britain, have justified her statesmanship. In 1894 compulsory arbitration in labour disputes (with the establishment of an Arbitration Court with Conciliation Councils to fulfil prior obligations in the settlement of disputes) was embodied in the country's laws, and it obtains to-day—re-enacted by the present Government after a brief period of abolition. New Zealand was the first to adopt it. A Labour Department was set up with a Minister for Labour—a step followed by every British country. Her Workers' Compensation Act, passed about the same time, is a just and useful measure; and following it and still existing, with subsequent amendments, is a Factories Act (which compels provision being made for employees' welfare), a Shops and Offices Act (operating in the same way in places of business), laws governing the conditions

under which miners and also farm labourers work, and other measures.

All countries have had their land problems. New Zealand has had her full share. Successive legislatures have tried almost all known remedies to prevent undue aggregation, and the locking up of great areas. Experiments with property-tax, a land-tax, a super-tax on big estates, the perpetual lease in regard to Crown lands, the renewable lease, the lease with right to purchase; with the compulsory purchase of large estates for subdivision purposes; have been made and various other means of limiting holdings and preventing absentee ownership tried.

Some experiments failed in their purpose, some of them have passed beyond the stage of experiment and are consolidated in the good will of the people. To-day, in New Zealand, there is a very useful land system, and one that, apparently, meets most needs. There is virtually no land, except State endowments and reserves, that

cannot be purchased, and those wishing to lease Crown lands, or purchase them, can choose their tenure. The State has power to purchase, compulsorily, land for closer occupation if it so desires, but experience has taught many things in regard to this system and the difficulties surrounding it. To-day, of 66,000,000 acres, 21,000,000 are sold, granted or held on freehold, 15,000,000 are reserved for public purposes, 18,000,000 acres are Crown lands leased under all tenures, 2,000,000 acres are Crown lands available for future disposal, 4,500,000 acres are native lands, and 5,000,000 acres are rivers, lakes, roads, etc., and areas unfit for cultivation.

Of all areas occupied 63.40 per cent are holdings of under 200 acres, and 36.60 per cent from 200 acres to 50,000 acres in extent. Seventy-five per cent of the holdings are not more than one-half a square mile in extent, but these represent only 14 per cent of the total of occupied land in the Dominion.

Some of the virtues of State ownership have been exhibited by New Zealand. Her railways are the property of the State. See COMMUNICATIONS AND TRANSPORT, page 4893.

Wisdom was shown in the early days in securing to the State the control of all water rights for hydro-electrical installations. Private undertakings are permissible, but only after consent has been obtained from the State. To-day, as shown in another article, almost every part of the Dominion is served with cheap electrical power supplied by State hydro-electrical head works established in various parts of the Dominion.

Other successful State enterprises are the postal, telegraphic, telephonic, and wireless services—successful in respect to their financial returns as well as in their up-to-dateness, and the service they give the public. Universal penny-postage obtains in the Dominion to-day; New Zealand was the first country to adopt it. To these must be added the Public Trust Office



OPENING UP NEW COUNTRY

How the country was burnt over by the pioneers to form settlements.

Photo. High Commissioner for New Zealand

(started in 1873) and now administering estates of over £60,000,000 value; and the State Fire Insurance (1903), State Life Insurance (1869), and State Accident Insurance (1901) Departments, a National Provident Fund, and a National Endowment Fund. There are also State Tourist, State Coal Mines, and State Forestry Departments.

From her earliest days New Zealand has placed education in the forefront of her State considerations. Her present system is built upon the foundations laid by the educationists of her early years. It is "free, compulsory, and secular." There is no child in New Zealand who cannot, with ordinary application, obtain a University degree practically without cost. Poverty is no bar to success, and parental neglect is guarded against as far as possible. Free medical advice is available to all scholars, also free dental attention. For the mentally deficient the State makes ample provision. The cost to New Zealand, from public

funds, of education last year was £3,256,000, which was £2 1s. 8d. *per capita*.

An equal care has been bestowed from the earliest days by the State in regard to the health of the people. There is a Minister and a Department of Health, the latter comprising divisions of: public hygiene, hospitals, nursing, school hygiene, child welfare, and Maori hygiene; each being under the supervision of a Director. The country is divided into health districts, each of which is under the charge of a Medical Officer of Health, who must be a medical practitioner with special qualifications in public health. These officers act as advisers of the local bodies in matters affecting public health. The Department also supervises the sale of food and drugs, and protects the public against exploitation by fraud in respect of alleged remedies. It administers the law covering the control of cemeteries and crematoria. It is impossible in a brief article to enlarge on the activities of this section of social activity, but it might be stated that New Zealand has the lowest death rate in the world—8.48 per 1000—and the lowest infantile mortality rate—32.26 per 1000. It was New Zealand that gave to the world the

Truby King system of child and maternity welfare.

New Zealand was the first British country to grant Old Age pensions (1898). Her present pensions list, with the cost last year to the State, includes the following: Old Age (£1,718,601); War (£1,349,447); Widows (£311,864); Maori War Veterans (£2557). Miners, for phthisis (£67,834); for the blind (£22,991), family allowances (£149,043). The total payments for pensions in 1936 was £3,659,664, a matter of £1 10s. 7d. per head of population. The aggregate pensions paid to 31st March, 1936, was £32,900,000.

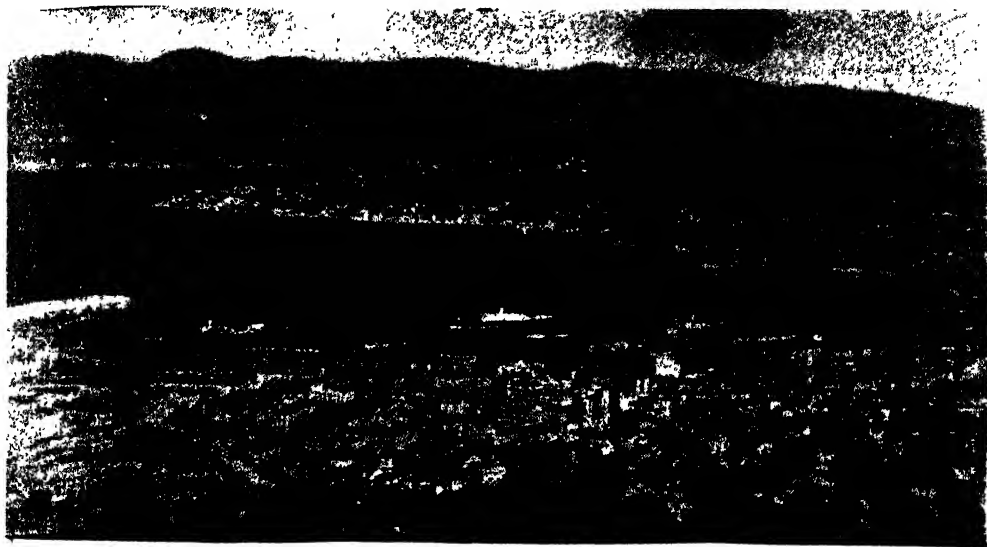
As to the Dominion's finances, the budget for the year ending 31st March, 1936, showed the revenue as £26,172,367, and the expenditure as £25,890,567. Only in the years of recent economic stress has New Zealand found any difficulty in balancing her budget, and she weathered the recent storm by imposing measures of rigid economy and heavy taxation. Her debt is heavy in proportion to her population, but it has been incurred chiefly in State development work, and is therefore backed by State enterprises which, in a considerable proportion, are revenue-producing. Her war loans were raised within her own borders. Of her



AUCKLAND

Entrance to harbour, with Rangitoto in the background. The prominent building in the middle distance is the War Memorial Museum.

Photo: New Zealand Shipping Co.



WELLINGTON HARBOUR FROM THE HILL

Photo New Zealand Government

debt, 56.17 per cent is domiciled in London, 43.27 per cent in New Zealand, and 0.56 per cent in Australia.

Last year the Savage Government passed legislation of very great importance especially in respect to social betterment. A very brief summary is as follows: Old Age Pensions (payable to women at 60 years, and men at 65 years) were increased to 22s. 6d. per week, income received and not property owned being the qualifying test; pensions for widows with dependent children were fixed at £1 per week, with a further 10s. for each child under 15 years; similar pensions were added for wives deserted by husbands. A pension at the rate of £1 a week, plus 10s. for a wife and 16s. for each child under 16, was provided for the permanently incapacitated. A basic wage for adult male workers was fixed at £3 16s. a week, and a forty-hour week was instituted. The Government also converted the Reserve Bank into a State Bank by the compulsory purchase of the privately owned shares at their current value (£6 5s. for £5 shares), and the Bank now has power to buy and sell Government securities, to underwrite Government loans, and to advance to the Government moneys on overdraft, for the purchase and marketing of New Zealand produce. The Bank is directed to control all foreign exchange funds resulting from New Zealand exports, and also the transfer of overseas funds to and from New Zealand. Power is also given to prevent if necessary the automatic convertibility of Reserve Bank notes into sterling.

SOUTHERN ALPS. The mountains of South Island rise range upon range and stretch from one end to the other of the island. Though the name Southern Alps is sometimes applied to the whole mountain system, it is usually taken to refer to the range of mountains with peaks above the snowline which rises sharply from the west coast and runs parallel with it for 120 miles south of Hokitika. The highest peak is Mount Cook, 12,349 ft. The snowline varies between 3000 and 3500 ft. On the eastern slopes the country is open and easy of access, grass reaching almost to the snowline. On the west access is difficult. Snowed torrents race through rocky gorges, there are steep slopes covered in primeval forest up to 3000 ft., and, for a thousand feet above this, low and almost impenetrable scrub.

SPORT. A temperate climate and abundant sunshine have helped to foster sport in New Zealand. Cricket matches were played very soon after the first settlers arrived, but the care and expense necessary to provide first-class pitches hindered the development of the game for many years. Visits from Australian and English teams gradually, however, helped to raise the standard of play, and New Zealand teams have visited England in 1927, 1931, and 1937. Several New Zealanders have done well in County and League cricket in England.

A few years ago Rugby football was almost a religion in New Zealand, and even to-day, in spite of many competitors for attention, it is the dominant winter pastime. In International football New Zealand has,

for its population, a truly remarkable record. Tours of Britain in 1905, 1924, and 1935 were very successful. Scotland and Ireland were beaten on all three tours, England twice, and Wales, who won an exciting match in 1935, 13-12, once. In two series

caught off the Bay of Islands in February, 1926.

New Zealand has a number of indigenous fresh-water fish, but most of these are small. Attempts to introduce British salmon and trout were first made some seventy years ago, and they were soon rewarded with remarkable success. The first brown trout were reared in 1867 from ova obtained from Tasmania, where the species had been introduced from the South of England a few years earlier. Within twenty years most of the rivers and many of the lakes of New Zealand carried stocks of brown trout of phenomenal size. The remarkable growth of trout in New Zealand waters is attributed to the abundance of suitable food afforded by the native aquatic fauna and to the favourable climatic conditions.

The Auckland Acclimatization Society introduced rainbow trout from California in 1883, and this species has flourished in the larger lakes of both Islands. Lake Taupo, with its tributary rivers, is regarded as the world's finest rainbow-trout fishing centre.

Quinnat salmon were introduced by the Marine Department in 1901, and early success was achieved in the Waitaki River, from which the fish spread to nearly all the



RUGBY SCRUM BREAKING UP

Rugby football is the dominant winter pastime in New Zealand.

Photo: High Commissioner for New Zealand

with South Africa, New Zealand emerged level on each occasion. In contests with Australia and New South Wales, New Zealand has shown herself superior. Association football is also played, and a British team visited the Dominion in 1937.

Golf has attained great popularity in New Zealand, and many men desert Rugby for it at a comparatively early age. In lawn tennis New Zealand has produced one world champion in Anthony Wilding, and at present has three or four players capable of making a good showing at Wimbledon. In athletic sports the most spectacular success ever attained by a New Zealander was J. E. Lovelock's win in the 1500 metres event at the Berlin Olympic Games in 1936. In rowing, sculling, swimming, billiards, and rifle shooting, New Zealand has produced men of championship calibre.

Racing is very popular in New Zealand and large sums pass through the totalisator each year. Book-making is illegal.

The coastal fisheries are noted for excellent flounders, snapper, blue cod, and groper. Swordfish (mainly striped and black marlin), mako sharks and other big-game fish are found off the east coast of the Auckland province, and they attract many local and overseas big-game fishermen. The principal centres are Whangaroa, Russell, Mercury Bay, and Tauranga. The season is from December to May. The world's record black marlin swordfish (976 lb.) was



TROPHIES OF THE CHASE

Boiling the heads of stags to remove the flesh.

Photo: High Commissioner for New Zealand

main Canterbury rivers. In 1908 the Department began to introduce Atlantic salmon, and this species is mainly found in Lakes Te Anau and Manapouri.

In recent years a great development in winter sports has taken place in New



NEW ZEALAND SPORT

1. Ski-ing on the Tasman Glacier. In the Southern Alps the snow line begins at 3000 ft. and hence winter sport centres are easy of access. 2. Trout fishing on Lake Taupa by the Waikaka Falls. Trout, introduced by sportsmen into New Zealand, have thriven and made New Zealand a famous game fishing country. 3. M.C.C. versus Wellington. Cricket enjoys great popularity. 4. On the golf links at Rotorua. 5. The start of a horse-race. 6. Yacht racing.

High Commissioner for New Zealand

Zealand. The principal ski-ing centres are Mount Cook and Arthur's Pass in the South Island and Chateau Tongariro and Mount Egmont in the North Island.



MOUTH OF THE TAURANGA-TAUPU RIVER AT LAKE TAUPU

Photo: Auckland Weekly News

New Zealand affords abundant scope for the walker, the climber, and the mountaineer, and there are still many peaks to be conquered for the first time.

SULLIVAN, THE RT. HON. DANIEL GILES (born 1882). Minister of Industries

and Commerce, and Railways, he has been Member of Parliament for Avon, a Christchurch City constituency since 1919. He was born at Christchurch, and was apprenticed as a french polisher. He travelled in Europe and America and returned to New Zealand to take up journalism as an occupation. He has been prominently connected with the Labour movement, and also served for some years as Mayor of Christchurch.

TAUPO, LAKE. The largest lake of New Zealand, it lies almost in the centre of North Island and in a district subject to volcanic disturbance. It is 25 miles long and 16 miles wide, and has a total area of 238 sq. miles. To the south of the lake rise the volcanic peaks of Mounts Tongariro, Ngauruhoe and Ruapehu which range from 6500 to 9000 ft. in height. Lake Taupo feeds the Waikato River.

TOKELAU ISLANDS. See UNION OR TOKELAU ISLANDS, Vol. VIII.

UNION OR TORELAU ISLANDS. See article, Vol. VIII.

WANGANUI. The fifth largest city of New Zealand, it stands in the mouth of the Wanganui River in North Island. The port can accommodate large vessels, the depth



GENERAL VIEW OF WANGANUI

Fifth largest city of New Zealand.

Photo: High Commissioner for New Zealand

of water approaching 30 ft. Wanganui carries on a large import and export trade, for it is the natural market of a large and fertile farming area. Wool is the chief export. Population (1936) 25,761.

WANGANUI, RIVER. Sometimes known as the River Waitaki, it rises on Mt Tongariro in North Island, and flows westward to enter the Tasman Sea 200 miles from its source. At its mouth stands the important town of Wanganui. Steamers can ascend the river for 140 miles

WEBB, THE RT. HON. PATRICK CHARLES. Minister of Mines for the New Zealand Government. He has represented the Buller constituency since 1933. He was a member of the House of Representatives for a west coast seat in 1913 and 1914 and again in 1917.

WELLINGTON. See NEW ZEALAND, Vol. VI.

WILFORD, THE RT. HON SIR THOMAS, K.C.M.G. (born 1870). He held the office of High Commissioner in London from 1930 to 1933. He afterwards accepted several directorships in London, but in 1936 announced his intention of again settling in New Zealand. Born at Lower Hutt, Wellington, he was educated at Wellington College (N.Z.) and Christ's College. He was admitted to the bar in 1891 and in 1894 began to practise on his own account. He was elected M.P. for Wellington Suburbs in 1900 and he represented Hutt from 1903 to 1930. He was Minister of Marine and Justice for two years in the National Government during the War and Leader of the Opposition from 1919 to 1925. After the success of Sir Joseph Ward's "United" Party in the General Election of 1928, he became Minister of Justice and Defence. He became a K.C. in 1929.

SOUTH AFRICA SECTION

AARD-VARK. See article, Vol. I.

AGRICULTURE AND FARMING. In order fully to understand the conditions under which the South African economic history unfolded itself, it is necessary to know something at least of the country's climatic and geographical conditions, its area and population, agricultural and mining conditions, industrial development and all the various historical facts related to its development.

European agriculture had its birth in South Africa with the arrival of Jan van

insignificant when compared with the riches contained at the first 12 in. of South Africa's soil, which engages the energies of a far greater number of *Europeans* than mining can ever hope to.

The tilling of the soil is the most ancient and the most honourable, as it is in the last analysis the source of all other wealth. The task of the farmer is to develop the land of his birth or adoption in a way which will inspire the love and pride of those who follow him.

Climate. South Africa is provided with a high amount of sunshine throughout the year, the growing season between frosts is usually a long one, 150 days and more. The Cape peninsula and the surrounding districts in the south-western area obtain most of their rain in winter. The eastern districts bordering on this so-called winter rainfall area have their rainfall about equally distributed between summer and winter, but the rest of the Union receives the largest proportion of its rainfall in summer, and is known as the summer-rainfall area.

In the winter-rainfall area the average rainfall varies from 15 to 40 in., while in the summer-rainfall area it varies from below 5 in. to about 30 in. Within certain isolated spots in the North-eastern Transvaal there is often a rainfall of 40 in. and over. In the summer-rainfall area the rains generally come down in the form of heavy showers at intermittent intervals, with the result that there is a heavy run-off into gullies, valleys and rivers. Hail often does great damage to crops in certain sections of the country, especially in the Transvaal. Periodical droughts of a severe nature also occur from time to time, resulting in great losses of sheep and cattle worth hundreds of thousands of pounds. It is estimated that only about 3,000,000 acres, 1 per cent of the total area of the Union, is irrigable.

Broadly speaking the soils are very deficient in phosphates, especially in the areas of highest rainfall. In the driest regions soils of alluvial origin are often *brak*. See CLIMATE, Vol IX, page 4953.

Growth. The development of the agricultural resources during the past half century has been no less phenomenal than the development of the mining industry, considering the limitations of soil and



NATIVE GRAIN STORE

Once common in native maize fields.

Photo. South African Railways

Riebeeck and his group of European settlers at Table Bay in 1652. They at once took steps to supply their own needs and those of the passing ships for fresh vegetables and meats. Jan van Riebeeck's cattle kraal in the shadow of Table Mountain was, indeed, the beginning of a pastoral industry that to-day numbers over 11,000,000 head of cattle, supporting great national resources.

Since that date agriculture and pastoral industry, as a joint economic activity, remained the only important industry of South Africa until the development of the diamond and later the gold mines in the latter part of the nineteenth century. Even now, impressive as the figures relating to gold mining and diamonds are, they are

climatic conditions. Even to-day agriculture heads the list of occupations of Europeans in the Union. No less than 30 per cent of the adult male population are occupied in it.

Within a period of fifty years, agriculture in South Africa had to emerge from its self-sufficing economy of pioneer days to its present stage of competition in the world export market. European agriculture had many centuries to complete the same cycle. For South Africans it has been a rush of economic development through a brief period of turbulent times.

To-day the total agricultural valuation of land and improvements, machinery, implements and livestock is well above £500,000,000 and an estimate of the value of agricultural production during any crop year exceeds £70,000,000 on a basis of the latest market values. This is above the production of the gold mines (price of gold taken at normal valuations), as well as above the production of industries when it is considered that about £40,000,000 of the industrial production represents farm products manufactured for consumption. There are roughly 100,000 occupied farms in the Union.

There is a comparative absence of peasant farming in the Union, as it is known in more densely populated countries. The population has been so small and the empty lands so spacious that, up to recently, agricultural enterprise in the Union has been conducted more or less on an extravagant scale.

At the beginning of the present century, the end of a devastating war forced on the South African nation a new phase in its national occupations. Farms, flocks, herds and all agricultural enterprise had to be rehabilitated. The result is that in many respects rebuilding and establishing have largely superseded the processes of consolidation and organization.

In this process the re-creation of the economic structure during the brief period of three decades, the State had necessarily

to take a fairly active part, which, under the stress of world conditions, had to be more and more direct as time went on.

It is a fact that no country in the world is to-day more generous in its treatment of the man on the land. The Governments of South Africa, particularly since Union in 1910, have done their best to increase the numbers of farmers, to resolve their difficulties, and to keep them contented on the land. The State maintains at the cost of nearly £1 million a year an elaborate organization and staff of officials under the Union Department of Agriculture, who are responsible for carrying out every aspect of governmental policy of agricultural development. There is no difficulty in any branch of farming enterprise, in which the Department of Agriculture is not prepared to assist—no need which it will not try to satisfy from any one of its great divisions.



CEDARA AGRICULTURAL COLLEGE
Photo. South African Railways

In addition, there is the Land and Agricultural Bank, which has become in reality a kind of foster father to the South African farmer. Further, there are land settlement and irrigation laws, which are amongst the most liberal in the world.

Education. It is generally admitted that nowhere in the world are so many facilities and such highly skilled service placed at the disposal of the farmer at such low cost. At any of the five Government Schools of Agriculture a farmer or his son may undergo a two-years' course of intensive training in the latest methods of agriculture for the modest fee of £50, which covers tuition, board, lodging, and laundry. Vocational training for present and prospective farmers is the main function of the Union Department of Agriculture's Schools of Agriculture. Their three-fold functions have been summarized as follows—

- (1) to provide vocational training courses for future farmers;
- (2) to serve the agricultural communities of their respective areas with advice

and enlightenment on all matters agricultural, i.e. the Schools became "extension centres"; and

(3) to investigate agricultural problems pertaining to their particular areas.

In addition there have been inaugurated special faculties of Agriculture at the two Universities of Stellenbosch and Pretoria, where are being trained agricultural specialists for the various educational and investigational duties required by the agricultural industry. At the University of Pretoria are being trained all veterinary officers required

education of farmers in the Union. But also "agricultural club work" is being greatly encouraged in all primary rural schools. "School Farms" have been called into being in conjunction with primary education, and in secondary schools agricultural science gradually is finding a more favoured place in the curriculum.

Production and Marketing. The sale of agricultural products on a rapidly expanding inland market commenced fifty years ago with the development of the mining industry. Soon, however, future generations were



CITRUS GROVE IN THE TRANSVAAL

The export value of citrus fruits, which totalled £376,579 in 1928, was £1,271,459 in 1931

Photo. South African Railways

by the Department of Agriculture, for which purpose the staff and laboratories of the world renowned Veterinary Research Institute at Onderstepoort are included.

A popular feature with practical farmers has been various special "short courses," offered by the different Schools of Agriculture and held at various times. Such a "short course" usually lasts for five days, when lectures and demonstrations are given on one subject for each course, e.g. sheep and wool, poultry, judging of cattle, soil reclamation and veld conservation, home decoration, agricultural club leadership, etc.

The demand for agricultural educational services amongst the rural adult population has increased continuously, and the results of such services have been distinctly encouraging. Short courses, lectures and demonstrations at "farmers' days" and at agricultural shows and other rural meetings, advisory visits to farms, radio talks, agricultural film shows, publications and advisory correspondence are all forms of popular

called upon to export high quality products to overseas markets. In 1886 the great majority of farmers were engaged in what was mainly a *subsistence husbandry*, that is to say, for their own direct needs. At the present time, all farmers are in greater or lesser measure dependent upon the cash income derived from the sale of produce. On the other hand, the cash expenses incurred in connection with their production (e.g. for land, for machinery and implements for pedigree stock, for fertilizer, for rail charges) have become increasingly heavy.

It is obvious, therefore, that problems in connection with prices, access to domestic and overseas markets, competition with foreign products, the most lucrative combination of enterprises on one farm, organization of farmers to ensure joint action in the furtherance of their interests arise on every side. Accordingly the Union Department of Agriculture during the past few years has devoted more and more attention

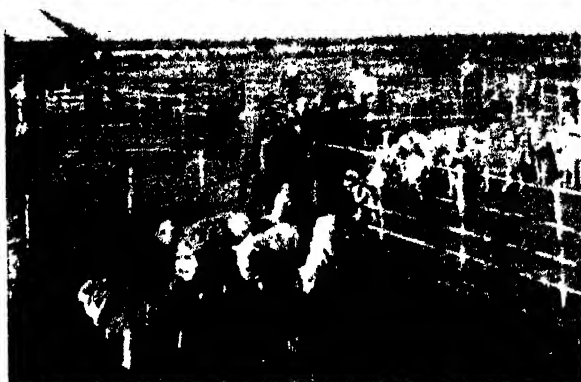
to the financial and economic problems connected with agriculture.

South Africa is essentially a pastoral country, but in its formative years the nation with its large resources of unclaimed wealth in a boundless virgin hinterland at first exploited the best areas, and later in its agricultural stages followed the fluctuating grain market of the world, with the result that established methods of stock raising were slow in their adoption and practice.

A settled sheep and cattle-farming policy has now been adopted and is gradually being extended. Whilst, therefore, most of the modern farmer's business is centred around the major activity of stock-farming, the other major enterprise, namely, the production of crops, should aim very largely at making provision for feed for stock. The fact should be appreciated that the farmer's business is composed not of independent units, but rather of phases which are closely related.

The various branches of farming, as existing to-day, are distributed all over the Union. The winter rainfall area of the south-west Cape is devoted chiefly to the production of deciduous fruits and wine, whilst on either side of this region are the principal wheat districts. In the arid north-west parts of the Cape Province fat-tailed mutton sheep (Afrikaners and Blackhead Persians) as well as goats are rather important; whilst farther towards the east woolled sheep (Merinos) are predominant. South of this latter area is to be found the main centre for Angora goats for mohair production. Woolled sheep also play an important part in the farming systems of the Orange Free State and large parts of the Transvaal.

In the western parts of the grassveld region cattle ranching is important, but with increasing rainfall towards the east, maize growing becomes increasingly predominant. Other products (such as potatoes in the eastern Orange Free State and Transvaal provinces) also play an important part, whilst dairy products, more especially in the Natal-East Griqualand area, the north-eastern Orange Free State and the high veld of the Transvaal have reached a prominent position.



FARMING

1. Angora goats. In 1925 there were 2,150,601 Angora goats in the Union; in 1935 only 747,891 owing to the falling off in the demand for mohair.
2. Merinos in sorting pens. South Africa has over 35,000,000 sheep and exports nearly 300,000,000 lb. of wool annually.
3. Ostriches with young. The decline in the demand for ostrich feathers since 1914 has reduced the number of ostriches to 32,000.

Photos: South African Railways; Trade Commissioner for South Africa

Along the Natal coast, tropical fruits are grown, whilst the production of sugar-cane has advanced tremendously. The growing of citrus fruits has latterly made rapid strides in the northern and eastern Transvaal, in parts of Natal, and the south-eastern Cape Province, large quantities of these fruits being exported to overseas countries.

So far as tobacco is concerned, it may be pointed out that the growing of Turkish type tobacco is confined almost exclusively to the wine and fruit districts of the south-western Cape province, whilst the main area of Virginian tobacco coincides largely with the citrus areas of the western Transvaal. Cotton is grown in some districts of Natal and Transvaal. In the vicinity of the larger towns, vegetable production is often important, whilst in the warmer parts of the northern and eastern Transvaal winter vegetables are being produced to supply practically the whole of South Africa.

The following data regarding the relative growth of certain commodities of South African agricultural production during the last fifty years or so should prove interesting—

1. Sugar (production). 1897: 12,200 tons of 2000 lb.; 1911: 82,000 tons; 1925: 161,000 tons; 1935: 358,700 tons.

2. Wattle Bark (production). 1896: 3380 tons of 2000 lb.; 1916: 51,746 tons; 1936: 111,753 tons.

3. Deciduous Fruits (export). 1899: 155 tons; 1935: 71,000 tons.

4. Wine and Grape Products (reduced to leaguers). 1886: 75,000 leaguers of 128 gals.; 1900: 160,000 leaguers; 1920: 200,000 leaguers; 1936: 230,000 leaguers.

5. Ostriches (number). 1904: 360,000; 1912: 800,000; 1930: 32,000.

6. Sheep (number). 1904: 16,323,000; 1918: 29,914,000; 1934: 35,011,000.

7. Cattle (number on farms of Europeans). 1904: 3,500,000; 1918: 5,172,000; 1934: 6,520,000.

8. Citrus Fruits (export). 1911: 853 tons; 1935: 148,000 tons.

9. Wheat (production). 1904: 709,000 bags of 200 lb.; 1924: 1,763,000 bags; 1936: 6,100,000 bags.

10. Maize (production). 1904: 3,612,000 bags of 200 lb.; 1918: 12,640,000 bags; 1934: 24,119,000 bags.

11. Wool (export). 1835: 216,000 lb.; 1875: 48,449,000 lb.; 1915: 183,004,000 lb.; 1935: 277,077,000 lb.

The Union of South Africa is pre-eminently suited to the production of fine wool. With few exceptions the merino thrives in all parts of South Africa, where at present 7½ per cent of the small stock consists of animals of this type. The small stock population of

the Union at the last census amounted to 41·18 millions, comprising merinos, non-woolled sheep and Angora and other goats. The small stock, mainly merinos, doubled itself in a quarter of a century. Because South African pastures are on the average too poor to allow of the lamb reaching a marketable condition at an early age, so far only mature and semi-mature animals have been available for export. The prices paid for this class of carcass overseas are unremunerative, with the result that no export trade of any value has as yet developed in mutton and lamb. Attempts are being made at present to establish such an industry in certain limited areas considered to be suitable, e.g. land included in the large irrigation schemes.

The development of a sound beef-cattle industry, for which the conditions are best suited, was, and still is, beset by many difficulties and disadvantages, but the position is being faced with courage, and tackled with fortitude and good prospects.

The Government has consolidated the position by beneficial measures in the form of subsidies, bounties, Acts of Parliament and other far-reaching projects of rehabilitation. One outstanding example is the Bull Licensing Scheme.

The preparation of chilled beef and its export over long distances was, until recently, considered impossible and unsafe, but the results of research and trial shipments have now brought South African ports well within the chilled beef zone. Since 1934 the export of chilled beef has, with the exception of short intervals, developed into a definite and organized undertaking supported by an increasing number of progressive cattle farmers in the best cattle breeding and finishing areas. Financially also, it has so far been a success.

The dairying branch of cattle farming is gradually becoming more secure to the extent that the average farmer now realizes the futility of growing crops in competition with the world, rather than securing returns from his crop through his herd of dairy cows, and by the increasing use of supplementary feeds and surplus grains for fattening his beef cattle.

During the past few years colossal schemes to combat soil erosion and overstocking, to preserve the veld and to extend pastures have been put on foot by the Government. All these schemes have the animal factor as their main objective.

In addition, special mention must be made of the important role played by the Division of Veterinary Services, with its remarkably well equipped Institute at Onderstepoort, near Pretoria, Transvaal.



AGRICULTURE AND FARMING

1. Pans for drying fruit. 2. Tea plantation in Natal. The annual production in the Union is about 3,500,000 tons. 3. Wheatfield at the School of Agriculture, Potchefstroom. The Union Government provides excellent facilities for education in agricultural matters. 4. Picking pears. 5. Harvesting tobacco leaves. A bag is tied over the top to save the flowers from being pollinated.

Photos: Photopress; Topical; Trade Commissioner for South Africa

In conclusion, we may say that gradual and easy adaptation to the rapid growth of modern market conditions has not always been possible. Once they came into competition on world markets, South African agriculturists found the marketing problem of most serious importance to them.

The South African producers nevertheless tackled this problem as assiduously as they tackled the production problem in the various branches of their agriculture. They showed their appreciation of the facilities offered to them by the Government by adopting Government inspection regulations, to be enforced in regard to the grading, packing, and marking of most products exported from the Union according to specified standards. In most cases an extremely high standard of perfection has been attained.

AFRICA. See article, Vol. I.

ALBU, SIR GEORGE, Bart. (1857-1935). Chairman and managing-director of the General Mining and Finance Corporation, Ltd. Born in Berlin, where he was educated; settled in South Africa when 19 years of age, and lived in Kimberley from 1876 till 1891, when he took up his residence in Johannesburg. He was one of the pioneers of the grouping policy on which the Rand gold industry is based.

ALEXANDER, MORRIS, K.C., J.P., M.A., M.L.A. (born 1877). Born at Zinn, C.P., he was educated at the Cape, and Cambridge University. He made the law his profession, becoming an advocate of the Supreme Court of the Cape Colony, the Supreme Court of the Transvaal, the High Court of Griqualand, and the High Court of Southern Rhodesia. He has taken active part in politics since 1903, representing Capetown (Castle) in the Legislature. He is one of Capetown's leading public men, and a driving force in many local welfare schemes, etc.

ANDERSSON, LT.-COL., SIR C. LLEWELLYN (born 1861). A distinguished soldier, he took part in the Zulu War of 1879 and later became a close associate of Jameson. For his part in the Jameson Raid, Andersson was sentenced to two years' imprisonment, but this sentence was later commuted to a fine of £2000. During the South African War he raised the South African Light Horse, and during the World War he commanded a battalion of the North Staffordshire Regiment in France. In 1916 he was wounded and taken prisoner. Afterwards he commanded the special constables of Johannesburg, and in 1922 he was appointed Acting Deputy Commissioner of the police at Johannesburg.

ANIMAL LIFE. As the European settlers moved northwards in the nineteenth cen-

tury, many species of animal life were in serious danger of being exterminated and the animals were able to preserve themselves only by migrating farther into the interior. Elephants and the square-lipped or white rhinoceros, disappeared from the area south of the Oliphants River, where at one time they were comparatively common, falling victims to the skill of the native hunters who were frequently employed by Europeans. Between the Zambezi and Orange River the white rhinoceros was almost exterminated, and the quagga, a species of zebra, died out.

In the latter half of the century, the eland and other species of antelope, the graffe, buffalo, and black rhinoceros, also existed in great numbers, but they were driven



IGUANA

Photo. Cherry Kearton

northward and westward by the hunters. Carnivorous mammals, such as the African hunting dog (*lycaon*), jackal, spotted and brown hyena, several species of mongoose, serval, caracal, genet, civet, the wild cat, cheetah, leopard, and lion, were all hunted vigorously. The red, or Natal, duiker, a species confined to the wooded kloofs of the Drakensberg foothills, was nearly exterminated by natives with snares and dogs, and the Vaal rhebok, too, was virtually destroyed. The elephant, rhinoceros, hippopotamus, buffalo, and eland, common once in the Transvaal, are now unknown in that province, excepting in the special game reserves.

So serious was the position, from the point of view of the preservation of the species in South Africa, that pressure was brought to bear upon the authorities to take steps to limit the activities of hunters. To this end, a number of parks or reserves were created, and rigorous game laws were passed. Special areas were also classified as game reserves, and hunting within their boundaries was strongly prohibited.

The most famous of these game reserves is the Kruger National Park, one of the world's greatest wild life enclosures.



ANIMAL LIFE

Bush baby. 2. White tailed gnu or black wildebeest. This animal is now extremely rare. 3. Chimpanzee; one of the African anthropoid apes, it excels all other monkeys or apes in intelligence. 4. Grey-necked crowned crane. 5. Monkeys in Natal. 6. Wart-hog; so named because of the wart-like protuberances which make its face hideous. 7. African black rhinoceros. The African species has two horns, the Indian has one only. 8. Springbok; a species of antelope widely distributed in South Africa. 9. Cobra, the most dangerous of the poisonous snakes. 10. Giraffe. The long neck which enables the giraffe to browse on leaves and twigs makes drinking an awkward operation. 11. Ostrich, a bird now more commonly found on farms than in the wild state

Photos: Bund; Cherry Kearton; Fox; South African Railways

**PENGUINS ON HALIFAX ISLAND**

Transport difficulties hinder exploitation of the guano deposits

Photo: South African Railways

Approximately 8000 sq. miles in extent, it lies on the eastern border of the Transvaal Province, stretching from Komatipoort to the Limpopo River. Elephants inhabit the northern sections of this park, and hippopotami and crocodiles are found in all the larger rivers. Other animals that make their home there are the black rhinoceros, buffalo, eland, inyala, lion, leopard, wildebeest, zebra, waterbuck, kudu, giraffe, baboon, monkey, wart-hog, hyena, jackal, civet, sable antelope, etc.

In addition to this famous park, there are other vast tracts set apart for the preservation of animal life. In Natal, there are five such reserves. Giant's Castle Reserve, in the Drakensberg, runs from Giant's Castle to the valley of the Little

Tugela; it is 50,000 acres in extent, and contains about 1000 specimens of eland, and numerous species of oribi, rooi, rhebok, bushbuck, duiker, klipspringer, and grysbok.

The Ndumu Reserve, of about 24,000 acres, contains specimens of the larger hippopotamus and inyala. Within the Mkuse Reserve, 60,000 acres in extent, are found inyala and lions. The Hluhluwe Reserve, with 40,000 acres, is populated chiefly by the black rhinoceros, and contains many other specimens of rare animal life. The Umfolozi Reserve, of 60,000 acres between the Black and White Umfolozi Rivers, has at least 100 specimens of the white rhinoceros, and within its confines are also duiker, wart-hog, zebra, waterbuck, reedbuck, bushbuck, and buffalo.

**LIONS IN KRUGER NATIONAL PARK**

Photo: South African Railways



AFRICAN BIG GAME

1. Herd of elephants. 2. Zebras and wildebeest at waterhole. 3. Hippopotami. 4. Wildebeest and impala.

Photo: South African Railways

At the Bontebok Reserve, near Bredasdorp in the Cape Province, the antelope is protected in its natural environment. Here is to be seen the bontebok (a species almost extinct), the rhebok, vlakbok, etc. Also in the Cape Province is the Addo Elephant Reserve, approximately 16,300 acres in extent, where are herded the elephant, buffalo, bushbuck, wild pig, etc. In the Orange Free State's Reserve, known as the "Sommerville," in the district of Winburg, there are approximately 2500 blesbok and 1500 springbok.

The Kalahari National Park, in the division of Gordonia, between the Oup and

Transvaal, lions and leopards, to be found occasionally in the northern half of the province, are regarded as "vermin," and can be hunted without special permission, but in all the provinces, "Royal" game and ordinary game are protected from the hunters.

ARCHAEOLOGY. The story of man's antiquity in South Africa is largely the story of his stone implements and the inferences that may be drawn from them. Very few really ancient skeletal remains have been found yet. In addition to his bones and stones, man has left his traces in the form of shell mounds or "middens" on the coast, in engravings and paintings on rocks; and finally, though not until well into the Christian era, in a few architectural remains of a rather primitive kind.

Although the kinds of archaeological evidence are thus limited, stone implements occur throughout the Union in great abundance and variety. This is hardly surprising when we consider that man's antiquity in South Africa is probably as great as in Europe, extending back for at least a quarter of a million years, and that he continued in the Stone Age everywhere until about 1000 years ago (when the metal-using Bantu began to penetrate the country from the North) and locally, wherever the Bushman survived, even down to the middle of the nineteenth century.

Geography and Climate. Man's prehistory cannot be understood without reference to the facts of geography, geology, and climate.

Apart from certain minor alterations in the relative level of land and sea, the geographical contours of South Africa have changed little since man's coming. It has always been a great continental *cul-de-sac*, into which human migration was able to move with few serious obstacles on land, but maritime access to which was barred until considerable skill in navigation had developed. Thus we have to picture a succession of human waves converging on the sub-continent from various northerly directions, each one obliterating or coalescing with its predecessors.

Geologically, man's occupation falls entirely within the Pleistocene epoch, and a study of the factors of erosion and deposition during this period is important, since it is the old alluvial terraces left by rivers and lakes which supply essential clues to the age and succession of the stone implements found in them.



HAND AXES AND A DISC OF THE EARLIER STONE AGE
The disc is from Paarl, near Stellenbosch, Cape Province. The two axes on the left are from the Vaal River near Kimberley; that on the right from Brakfontein in the Orange Free State.

Photo: British Museum

Nossop Rivers, with an area of nearly 3000 sq. miles, is the home of the gemsbok (Cape oryx), springbok, hartebeest, eland, wildebeest, kudu, lion, and leopard.

Outside the game reserves, wild life is still extensive among the commoner species, and in different parts of the Union it is still possible to come across the tsessebe, specimens of roan and sable antelope, the ringed waterbuck, greater kudu, the inyala, bushpig, buffalo, etc. Baboons exist in nearly all mountainous areas and monkeys inhabit the forests. The antbear, the scaly anteater, and the porcupine all make their homes underground, and the cane rat dwells in the reeds that fringe the rivers. Rock rabbits, hares, the tree lemur, etc., are to be found in many parts of the country. So common are the Cape hare and the Zulu hare that they are exempt from the game laws. The larger animals are rare, if they exist at all, outside the reserves. In the

Finally, climate must have played a crucial part in determining the movements and density of population. It is known that there were several oscillations from abnormally wet, or "pluvial," to abnormally dry periods, producing marked effects on animal and vegetable life; these climatic changes are comparable with the glacial and interglacial periods of Europe, and may even have been due to the same factors. So far as our evidence goes, the Stone Age cultures of South Africa seem to coincide mainly with the wet periods, disappearing almost entirely during the dry periods. We may infer that during the latter, with their accompanying desert conditions, the population must have been either greatly reduced in numbers (if not exterminated), or have moved away to the North in search of a more congenial environment. Subsequently, as the climate improved again, new peoples, or the descendants of the old, moved southwards, bringing with them fresh cultural developments. This flux and reflux of population would explain the periodical changes in the types of stone implements; for these are most probably due to influences diffused from the North. Otherwise it would be difficult to account for the extraordinary parallelism existing between the various

speaking, the same forms of stone tools, with the same technical peculiarities, in South Africa as in Europe, but their order of succession, in the few but significant in-



MIDDLE STONE AGE IMPLEMENTS

1-6. Mousterian type points. 7 and 8. Still Bay type lance heads. 1 was found at Middledrift, near King Williamstown, East Cape Province; 2 and 3 are from Fish-hoek and Nord-hoek near Cape Town; 4 from the Stormberg Mountains of East Cape Province; 5 from the Rushmen's River, Weenen, Natal; 6 from Pniel, Vaal River; 7 and 8 from East London.

Photo. British Museum

stances in which this has been established by stratificatory evidence, is identical.

Stone Age Cultures. The Stone Age of South Africa is divided into three main periods—Earlier, Middle, and Later—corresponding to the three main phases of the European Palaeolithic, viz. Chelleo-Acheulean, Mousterian, and Aurignacian. Local South African names have been given to these "cultures" or "industries," after the sites where they were first discovered. Thus we have (1) the Stellenbosch and the Fauresmith (the latter being transitional between Earlier and Middle); (2) the various stages of the Middle Stone Age called after Glen Grey, Pietersburg, Howieson's Poort, and Still Bay; and (3) the Smithfield and Wilton industries of the Later period. The Stellenbosch, Fauresmith, Smithfield, and Wilton are each subdivided into at least three phases. It is only possible here to mention briefly a few of their chief characteristics. The type tool of the Stellenbosch is the pear-shaped hand-axe (Photo page 4938 *coup-de-poing*), made at first from the core of a pebble, and later from a flake, and with this implement is associated, in the second and third phases, the wedge-shaped "cleaver" (Photo page 4939), a tool which is rare in Europe. The Middle Stone Age develops



EARLIER STONE AGE IMPLEMENTS

Stellenbosch type cleaver or "biseaux" and a hand axe made from flakes. They were found by the Vaal River near Kimberley.

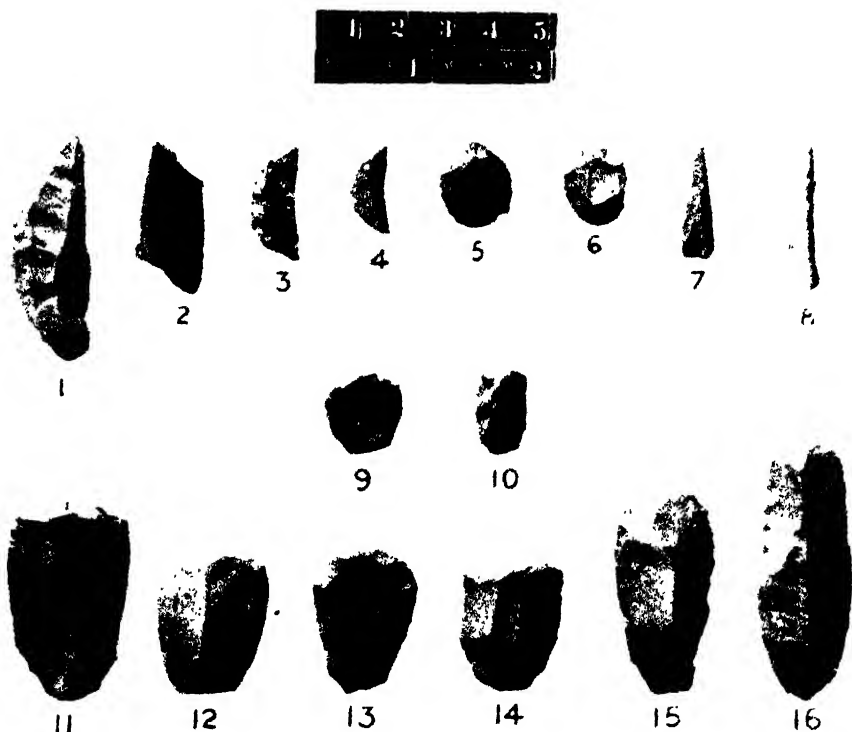
Photo. British Museum

Stone Age cultures of the Union and those of East and North Africa, as well as of Europe. Not only do we find, broadly

the technique of smaller pointed tools made from flakes. In the earlier phases these are trimmed on one surface only, the other being left plain (Photo page 4939); but the final Still Bay phase is distinguished by leaf-shaped lance heads beautifully "retouched" all over both surfaces and resembling the Solutrean "laurel leaf" of Europe. In the Smithfield industry the commonest tools are end-scrapers

about the type of man who lived in the Earlier Stone Age, since no human remains of this period have been found; but he must have been contemporary with a number of extinct animals, including the South African mammoth, whose remains occur in association with Stellenbosch tools in the Vaal River gravels.

The earliest known human skulls come



RELICS OF THE LATER STONE AGE

Crescents, end-scrapers and backed points of Wilton and Smithfield B and C types. 1, 3, and 8. Crescents, scrapers and backed points from Nord-hoek and Fish-hoek, near Cape Town. 2. Burin, or graver, from Cape Flats. 9 and 10. Miniature end-scrapers from Christol Caves, Wepener, Orange Free State. 11-16. End-scrapers of lydianite from De Kiel Coast and other sites in the Riet River Valley, Orange Free State.

Photo: British Museum

made of lydianite (indurated shale) (Photo page 4940, Figs. 9-10); in the Wilton, small crescents and end-scrapers are equally common (Figs. 1-8 above). In the middle and later phases of both these industries, which persisted down to quite recent times, "neolithic" elements are found in the form of polished grindstones, bored spherical stones (used both as club-heads and weights for digging-sticks), and pottery. Polished stone celts and stone arrowheads are extremely rare in South Africa, which has no true Neolithic period.

Human Remains. Nothing can be said

from Boskop and the Springbok Flats in the Transvaal, and a complete human skeleton from a stratified cave deposit at Fish-hoek, near Cape Town. The latter is definitely associated with "Still Bay" tools, and both of the former probably belong to the Middle Stone Age also. The type of man represented by these remains is of the species *homo sapiens*, and has affinities with the modern Bushman, though both his stature and brain capacity were larger. He is generally regarded as the Bushman's ancestor, and as having been widely distributed through South Africa during this period. He, too,

was contemporary with several kinds of extinct animals, notably a long-horned buffalo (*Bubalus bairii*) and the Cape horse (*Equus capensis*). The Bushman race continued to flourish during the Later Stone Age, and can definitely be regarded as the maker of the Smithfield and Wilton implements; but it was becoming stunted by an increasingly unfavourable environment.

Among the most important sites excavated, which have provided the stratificatory evidence on which this order of culture-sequence in South Africa is based, are the Vaal River gravels at Sheppard Island (near Bloemhof), at Windsorton, and Barkly West, and the deposits in Skildegat Cave, near Fish-hoek.

Shell Mounds. All round the coasts of South Africa are numerous shell-mounds or middens. These were formerly attributed to a special folk called "Strandloopers." But it is now recognized that they are the rubbish heaps of all the various South African peoples, ranging from Middle Stone Age man to the modern Bantu, the coastal members of which naturally subsisted largely on a diet of shell-fish. Many of them contain no datable remains; others contain the tools of one or more periods, sometimes in stratified deposits. Generally speaking, the stone implements found in them are of the Later Stone Age, and the pottery comprises Hottentot, Bushman, and Bantu types. The only ubiquitous tool is a roughly chipped pebble, evidently used for detaching the shells from the rocks and breaking them open.



SKELETON AT SMITHFIELD "B" SITE, ORANGE FREE STATE

The burial was marked by a heap of stone on the surface. The skeleton was found at a depth of four feet in sand.

Photo: Braunholtz



"PECKED" FIGURE OF AN OSTRICH

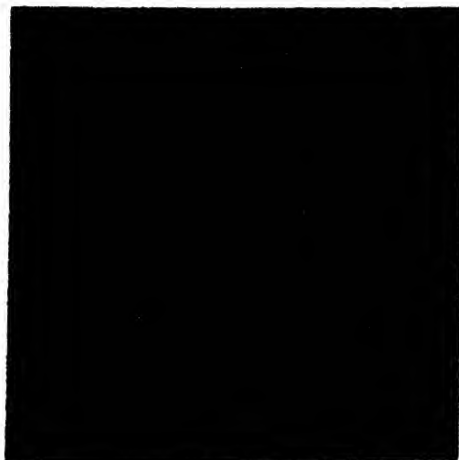
A prehistoric drawing on dolomite rock at Pniel Kopje, near Kimberley.

Photo: Braunholtz

Rock Engravings and Paintings. Among the most interesting, although not the oldest, of South Africa's prehistoric remains are the engravings and paintings on rocks, many of which show a high degree of artistic talent. Both types of art are almost certainly the products of different branches of the Bushman race and their ancestors. The oldest engravings antedate the paintings, belonging probably to the earliest phase of the Smithfield culture. The paintings, which were executed on the rock walls of caves and shelters, are the work of the Middle and Later Smithfield and Wilton periods, as is proved by the implements associated with them in cave deposits.

Both these forms of artistic expression continued over a long period, and a number of different styles can be distinguished, the relative antiquity of which is determined by the fact that figures in one style are often found superimposed on those of another style or colour.

The occurrence of engravings is confined almost wholly to the open veld region of western Transvaal, western Orange Free State, and Griqualand West. The style varies from outline profiles to solid silhouettes, and the technique generally consists of a kind of chipping or "pecking" rather than incising. The paintings are distributed over the whole eastern area of the Union



GLACIAL STRIATIONS AND GEOMETRIC ENGRAVINGS
On a rock surface at Nootgedacht near
Kimberley.

Photo: Braunholtz

from north to south (as well as in Basutoland), where the more broken and mountainous country provides suitable cave conditions for a form of art needing protection from the weather. Red, yellow, white, and black are the colours used, the earlier paintings being in monochrome, and many of the later ones in two or more colours.

The subjects depicted are mostly animals, especially those that were hunters' game, but they include circles and other geometric figures, probably symbolical; while many of the paintings illustrate scenes of the chase, elaborate ceremonials, or battles between Bushmen and Bantus. Some of them are known to be as recent as the nineteenth century. Similar paintings and engravings have been found in Rhodesia, Tanganyika, and North Africa, and (paintings) in eastern Spain: this suggests an ancient migration of a hunting "Bush" folk right across Africa from the north, or possibly diverging north and south from some central point of the continent.

Stone Ruins. There are few remains of ancient monuments, properly speaking, in South Africa. They fall into two main groups, and are all comparatively recent.

1. Firstly, in the Zoutpansberg district of N. Transvaal have been found extensive ruins of old Bantu settlements, of medieval and post-medieval days. Two sites have recently been excavated here, though not yet completely, viz. Bambandianalo and Mapungubwe, both of which must have been occupied for many generations. The former appears to have been the earlier, and its occupants—a pastoral folk of Sotho stock—

probably represent the vanguard of Bantu penetration into South Africa about 1000 years ago. Mapungubwe, of somewhat later date, is situated on a precipitous hill of great natural strength, fortified by breastworks of dry masonry, and enlarged by retaining walls filled with earth. The occupants were of mixed Sotho and Shona stock. Judging by the finds, which include copper, bronze and iron objects, finely-wrought gold ornaments and pottery, as well as imported Oriental glass beads and Chinese porcelain, this settlement belongs to the same Bantu cultural phase as the better known stone ruins of Southern Rhodesia, and was probably contemporary with the second and greatest Zimbabwe period. The Oriental imports indicate trade with the early Arab settlements on the eastern coast.

Among the most sensational finds were sculptured figures of animals plated all over with gold foil, and a cemetery containing twenty-three human burials. A full report of these discoveries has not yet been published.

2. Secondly, there are a number of groups of small circular "beehive" huts, built of undressed stones, in S. Transvaal and N.E. Orange Free State (Vechtkop, Tafelkop,



SITES OF ARCHAEOLOGICAL DISCOVERIES

Above: Christol Cave, Ventershoek, Orange Free State, a prehistoric rock shelter decorated with Bushmen paintings. *Below:* The Vaal River at Canteen Kopje. In the 60-ft. alluvial terrace stone implements of Stellenbosch type are found

Photo: Braunholtz

Platberg, Koffiefontein, etc.). Other groups of similar stone huts, but plastered with clay and cowdung, occur in the Magaliesberg valley of the Transvaal. Probably none of these settlements is older than the eighteenth century, and some of the human skeletons found point to a mixed Bantu-Bushman folk as the builders, who were familiar with the arts of pottery and iron smelting.

Mines. Finally, mention must be made of the numerous remains of pre-European mining operations in N. Transvaal (as also in S. Swaziland), indicating extensive and prolonged mining for gold and copper. These workings have been attributed by some investigators to ancient "prospectors" of Oriental or Egyptian origin. But there is no convincing evidence of great antiquity, and it seems more reasonable to assign them to the same medieval period as the ruins of Southern Rhodesia and the Transvaal, where great Bantu kingdoms were developing and experiencing the effects of contact with the Persian and Arab traders, who established themselves on the east coast of Africa from about the seventh to the sixteenth centuries A.D.

Creation of an Archaeological Bureau. In conclusion, it should be remembered that archaeology as a science is of comparatively recent growth in South Africa, and much more investigation is needed before final conclusions can be reached on many questions. The "Commission for the Preservation of Natural and Historical Monuments" was reconstituted with increased powers by the Ancient Monuments Act of 1934, and a great step forward has been taken by the creation of a National Bureau of Archaeology (with headquarters at Johannesburg, and an energetic Director), which is engaged in recording all ancient remains in the Union, and scheduling many of them for preservation. It may therefore be hoped that much fresh light will soon be thrown on the various archaeological problems of the country, both by fresh discoveries and excavations, and by more detailed analysis of the existing records.

ARCHITECTURE. South Africa is more fortunate than the other Dominions and Colonies of the Empire in having had, like the eastern States of America, a tradition in architecture and the arts established there by the pioneer founders of the colony. The Dutch and French colonists towards the end of the seventeenth century, when Cape-town was little more than a victualling station, had to be content with primitive

dwelling. But first under the enlightened and adventuring rule of the Governors van der Stel, and later during the wars and rivalry of the sea-powers when the Cape became, as was said, "the half-way tavern of the Indian Seas," the colonists grew rich with the sale of the harvest of their farms and vineyards, and could afford to build more substantial houses enriched by good craftsmanship in the structure, fittings, and furnishings.

Before the evil days of the industrial revolution and of machine-made goods and cheap transport, they had to depend mainly on their limited resources of materials and skilled labour. They imported only the



DROSTDY, STELLENBOSCH

Photo South African Railways

more precious things, and, when they had exhausted the indigenous timber, teak-wood from Java. There was no building stone available; so they built with sun- or half-burnt brick which demanded thick walls and plaster surfaces; these were white-washed. They had stoutly-made sash-windows with small barred panes, the upper half fixed and the lower protected with strong hinged and bolted shutters; the doors were made in the same stout manner. The rooms were high and in the southern European manner they shut in the cool air of the early morning during the heat of the day. The houses were of one storey with a storage-loft under the high-pitched roof. The gable ends were curved in shape and that over the entrance door was enriched with scroll-work, adapted in skilful plastercraft from the prevailing style of their home countries. The roof covering was of thatch made of tough reeds, of a golden colour when new and, when old, a greyish-brown. It is this soft-toned thatch, like a moleskin reflecting no light—the secret of a pleasant roof-covering—the few well-spaced windows

and the pearly-white plaster checkered with the shadows of the oaks planted close to the front of the house, which together make the aesthetic charm of the old Cape houses. There was also the "stoep" of red brick or tile, harder than the building brick and at first imported. These were broad and uncovered always in the earlier houses; they remind one of the clean pavements between house and canal in Holland. Later in a few instances, as the fashion came from the East, the stoeps were columned with flat roofs or trellised vines.

Under the classical influence then prevailing of ordered planning, the spacious farm buildings were designed symmetrically with the house, and avenues of oak or pine led into orchard and vineyard and on to the cornland. The homestead gave the expression of "all things in order stored, a haunt of ancient peace," so valuable in taming the wild raw valleys in a mountainous country.

For their home-made joinery and furniture they tempted the skilled craftsmen from the ships bound for the richer colonies in the East. With great skill and instinctive taste they adapted to their restricted means and needs the beautiful and varied native woods as well as, later, teak, the common hard-wood of the East. Their iron and brass work were of good solid craftsmanship. For household use and ornament they imported Chinese and Japanese porcelain rather than their home-made Delft.

For a short period under Dutch and then under the English regime a more classical style prevailed, distinguished by its high broad colonnades with flat roofs, which formed a grateful protection from the high sun and heavy rain. Such were the buildings in India and the tropical colonies, and the "colonial style" of the eastern States of

America. The style is as well suited under the conditions of South Africa to the larger buildings as the earlier one-storied high-pitched thatched roofs and gables were to the need and comfort of the farmer.

Then came the industrial revolution, evil days indeed for architecture and her sister arts. Cheap transport brought machine-made things which replaced the South African local crafts and craftsmen; the resultant was a Babel of debased styles in everything. It was Cecil Rhodes with an instinctive genius for the beautiful and the influence to convert by precept, and wealth to back precept by example, who initiated a renaissance of the old arts of the early colonist and of the "Grand Manner" of the simpler classical designs.

The arts followed the rapid political and economic developments of South Africa. After the Anglo-Boer War, Lord Milner preached Rhodes' ideal of his "Doctrine of Ransom" as applied to art; that those who became rich by deforming the fair face of the earth by the extraction of its wealth, should pay back some of their debt by creating beautiful homes. With this encouragement and the loyalty to the ideal of those who built, residential Johannesburg and Pretoria became "garden cities" of well built houses with gardens often terraced on the slopes and the rocky tops of the kopjes. Then quickly followed the Union of the four Colonies into one Government, and Britain's former enemies, Generals Botha and Smuts, carried on by the same idealism in the arts as in politics, built the Administrative Capital Buildings round a natural amphitheatre on a platform of the high kopje which overlooks and dominates Pretoria.

Other public buildings and schools followed to a less degree the good example. Churches, too, sprang up in the new colonies



UNION BUILDINGS, PRETORIA
Photo: South African Railways



ARCHITECTURE

1. "Groote Constantia," Capetown, one of the finest buildings in the Colonial style. 2. "La Dauphine," one of the oldest Dutch homesteads in the Cape, it was built in 1804. 3. "Boschendal," Cape Province, a fine example of South African architecture. 4. "Groote Schuur," built by Sir Herbert Baker for Cecil Rhodes, it led the way in the return to the simplicity of the older architecture. 5. Rhodes' Memorial on Table Mountain. In style and setting startlingly akin to the best Athenian work. 6. "The Homestead," Tokai, illustrates how the Dutch style is appropriate to smaller houses.

Photos: Sir Herbert Baker, South African Railways

in a style which, while reminiscent of those at home, made no attempt to imitate the many-windowed Gothic, a style developed in the colder and less sunny climates of northern Europe, but rather the small-windowed earlier and Romanesque types evolved in sunnier Mediterranean countries.

And now we see another hasty development in South Africa brought about, as in all countries, by the upset of the World War. How far will the great traditions of grace in ordered building in the Mistress Art of Architecture, first established by the Dutch colonist and carried on by the great men of

both the English and the Dutch peoples, prevail over "modern" licentiousness and the greater facilities of building caused by new inventions in the methods and materials of the craft?

ARMY, SOUTH AFRICAN. See **ARMY**, Vol. I.

ART. Art in South Africa began long before the first white man set foot in the country. In the strict sense of the word it may be said that the only art yet produced in South Africa that in treatment, as well as subject, unmistakably reveals its origin is aboriginal.

There is not yet a negro art cult among the aesthetes of South Africa, but there is nowadays a fairly general recognition of the merits of Bushman painting and of the work of native craftsmen. Archaeology and anthropology are sciences now highly honoured in the Union, and their studious cultivation has encouraged interest in, and respect for, the troglodyte relics of primitive cultures.

From a white man's point of view South Africa is still a young country. It is not in the least surprising nor humiliating (when one considers how much of the white man's time has been taken up in pioneering and in the progressive development of virgin soil) that a genuine South African art is not yet much in evidence. Now that the struggle for life is no longer so intense as it was in the pioneering and nation-building days, South Africans have more leisure to cultivate their gardens and, if they have creative impulses, to produce works of art.

For some time to come these works of art will still, I think, be mainly derivative. As Professor T. J. Haarhoff pointed out in his lectures on Afrikaans at Oxford, a literature exists in South Africa which is as racy of the soil as the works of Chaucer and Homer. The same cannot be said for South African art, for the simple reason that the need for expressing themselves nationally has not been so urgent for painters as it has been for writers. Almost all schools of paint-

ing, ranging from the Academic to the Expressionist, are now represented in the Union, the Academic predominating, but one would be hard pressed to discover signs of a typically South African school of painting.

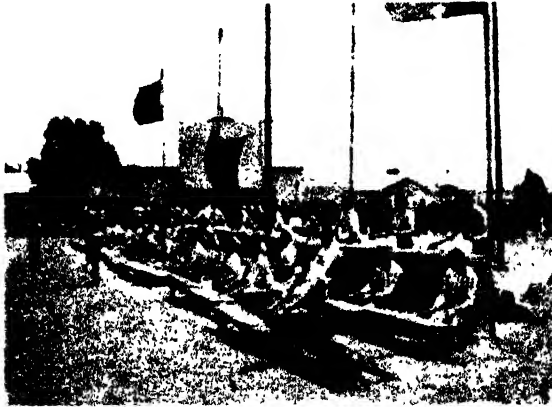
If one exists, it has only one member, J. H. Pierneef. In his bushveld landscapes he has mapped out a country which would be entirely new if it did not remind one a little, in its technical approach to the subject, of "German wood-cut painting." Pierneef

has made frequent and fruitful treks into the open country, and each time brought back batches of pictures which more simply and vividly express the typically South African scene than the landscapes of any other artist.

South Africa's foremost painter, by fairly common consent, is (or rather was, for he died some years ago), Peter Wenning, a Hollander. He

ranks as South African by long residence and because he developed his art in the country. Wenning began painting late in life and died before he could fully develop his singularly sensitive talents. A mildly melancholic romantic and, like his fellow-countryman and expatriate, van Gogh an admirer of the Maris brothers, he is South Africa's first Impressionist painter of any account.

Many South Africans, who still persist in confusing photography with art, place their faith in the durable value of the works of Volschenk, a landscape painter who has rivalled R.A.s of the old school in his devotion to detail and the loving care with which he reported prosy facts—in his case, bush-clad kopjes and krantzies bathed in blinding sunlight. Others swear by Gwelo Goodman and Roworth whose descriptive reporting of the South African scene is more impressionistic and permits of purpler passages. South African painters who have won a wider recognition, chiefly overseas, are Neville Lewis and Edward Wolfe. Both are represented in national and municipal galleries in Great Britain, and both are



SOUTH AFRICAN NATIVE BAND

The primitive instruments are made of strips of wood which are struck with wooden mallets. The tins of varying size over which the strips are suspended by leather thongs, give the variation in note

Photo. South African Railways

claimed as British as well as South African artists.

Lack of imagination and skill, as well as lack of interest, has prevented many South African artists from tackling figure subjects. Neville Lewis is one of the exceptions, and he is also one of the first (the pioneer in this respect is Oerder, who flourished in Republican days and who was, it is interesting to note, the S.A. Republic's official war artist) to make serious studies of native types.

Edward Wolfe and Irma Stern followed his example. In their case European culture as well as their natural sensibilities inclined them to select subjects to the beauty of which so many of their colleagues were so strangely blind. Their preference for sitters of colour provoked some antagonism, but many South African art lovers were even more disturbed by their modernism in the Paris (Post-Impressionist) and the Berlin (Pre-Nazi Expressionist) manner. Since then so-called "modern art" has become more fashionable and also better understood in the Union. Edward Wolfe did not wait for this inevitable reaction in his favour, but Irma Stern is still carrying on missionary work in the land of her birth for her particular brand of modernism.

Several South African artists have been driven into exile to seek the encouragement and inspiration they have failed to find in their own country. So far very few have shown any signs of following Miss Stern's example by returning to fight for their place



NATIVE GIRL, BY EDWARD LEWIS
Courtesy, Edward Lewis

in the sun. Among the minority is Moses Kottler, perhaps South Africa's only genuinely creative sculptor. For some time past he has been busy carving huge stone caryatids for the new public library at Johannesburg. Such works, because of their size and substance, may live a long time, but Kottler is more likely to be remembered by posterity, I think, for his sensitive wood carvings and bronze busts of coloured children. Sculptors are rare in South Africa. Before Kottler came on to the scene the only notable one was van Wouw (creator of the Kruger Memorial in Pretoria and the Vrouwen Monument at Bloemfontein), a conscientious craftsman and a realist of the old school.

For the most part the painters of South Africa have shown little enterprise in discovering and covering new ground, being content to register familiar scenes in rather monotonously familiar terms.

Mrs. Bertha Everard is one of the few landscape painters who has displayed an interest (albeit a somewhat bleak interest) in formal design.

Victorian art doctrines still predominate in the Union, but a younger school of artists, more ready to return to first principles even at the risk of being described as Art Bolsheviks, is growing up in the country. Among its most promising members are Gregoire



MEXICAN MOTHER AND SON, BY EDWARD WOLFE
Courtesy, Edward Wolfe

Boonzaier, François Krige, Maggie Laubser, Le Roux Smith, and Eleanor Esmond-White.

Gregoire Boonzaier is the gifted son of a self-taught South African cartoonist. Taken in hand and trained at a tender age by his father (a man of remarkable talents and temperament), he has since escaped from tutelage to develop his own individuality. He is regarded by many as the leader of his generation. Others are inclined to award the palm, in anticipation, to François Krige who is still on the threshold of his career as a painter. Eleanor Esmond-White and Le Roux Smith are South Africa's first fresco painters in the real sense of the term. They designed and executed murals for South Africa House in London.

The new status of their nation has made South Africans almost excessively self-conscious in the cultural sense. This has its dangers but also its advantages. No genuine claims are likely to be overlooked even though a few false ones may be too freely granted on patriotic grounds.

State encouragement of artists of promise and achievement now forms part of Government policy. Painters and sculptors are being commissioned to decorate public buildings. Several schools of art in the provincial centres of the Union have been reformed and reorganized to become institutions with definite aims and modern methods of instruction instead of the rather ramshackle workshops and playgrounds for sham Bohemians and half-baked art students they once were. A few of the public art galleries have undergone similar transformations and renovations.

Without wishing to convey the impression that everything in South Africa's art garden is lovely, it can be said that a good deal of weeding as well as intensive cultivation has been taking place in the last few years, and that crops, in the not too dimly distant future, should be promising.

A brief reference to music in South Africa brings this short and, perhaps too summary, chronicle to a close. There is plenty of executive talent in the Union, some of it of the highest order, and there is a music loving public which is both intelligent and responsive, but there is little creative achievement.

BAILEY, SIR ABE (born 1864). One of the principal Transvaal mine owners. Born at Cradock, Cape Colony, he was educated in England. He joined his father at Queens-town and took part in the rush to Barberton in 1886. For alleged complicity in the Jameson Raid he was sentenced to a term of imprisonment. During the Boer War he assisted in the raising of several irregular regiments and later became a Brigade Intelligence Officer, being twice mentioned in

despatches. He was granted both the King's and the Queen's medals, with six clasps.

From 1902 to 1905 he represented Barkly West in the Cape House of Assembly, and from 1910 to 1924 was Krugersdorp representative in the Transvaal. He held important rank with the Union forces in the 1915 campaign in South-West Africa. He has been a generous benefactor to South Africa.



SIR ABE BAILEY
Photo: Topical

BAKER, SIR HERBERT (born 1862). Architect. Sir Herbert has designed and constructed many of South Africa's most famous buildings. Born and educated in England, he began to practise as an architect in Capetown in 1892, and built Groote Schuur and other buildings for Cecil Rhodes. In 1902 he transferred to Natal. His works in South Africa include Government House and the Capital Buildings for the South African Government at Pretoria, the Rhodes Memorial on Table Mountain, the Cathedral at Capetown, Pretoria, and Salisbury (Rhodesia). In India he built the Secretariat and Legislative buildings for the new capital at Delhi. His chief works in England include the Bank of England; Rhodes House, Oxford; and South Africa House, Trafalgar Square.

BANKING AND FINANCE. It may be safely assumed that in no other part of the British Empire during the last twenty-five years have banking services increased so rapidly as in South Africa which, for the purpose of this article, includes the territories of the Union of South Africa, South-West Africa, Southern and Northern Rhodesia, and Nyasaland.

It must, of course, be realized that the commercial, agricultural, and mineral development of these countries has been more recent in history than in Australasia, Canada, India, and in most of the Crown Colonies.

The burden of assisting financially the important mining and agricultural ventures, which have been developed in these areas in recent times, has fallen for the greater part upon two banks of British origin—namely, the Standard Bank of South Africa, Ltd., and Barclays Bank (Dominion, Colonial and Overseas).

We find then that two British banks

between them have opened branches in every town or centre of any importance in the Union of South Africa, South-West Africa, Southern and Northern Rhodesia, and Nyasaland.

These countries have a combined area of over 1,520,000 sq. miles, served at the present time by about 780 branches and agencies of the two banks. The European population of these territories is at the present time just over two millions; the native population can only be conjectured.

Banking Survey. In the year 1910 there were more than 350 branch banks scattered throughout the countries mentioned, of which the Standard Bank of South Africa controlled 164, the National Bank of South Africa 70, the Bank of Africa 59, the African Banking Corporation 35, and the Natal Bank 32. Total assets of these five banks at the beginning of 1910 amounted to approximately £59,586,000.

At the present time, as has been already mentioned, there are 780 branches of the two banks now operating, whose assets total approximately £160,000,000.

It will be seen, therefore, that during these twenty-five years of progress, assets of the commercial banks have been nearly trebled. Branch extensions have increased in nearly the same proportion, if allowance is made for the closing of redundant offices of banks which had become absorbed by other institutions.

The following is the South African Banking consolidation which has taken place since 1910—

The Standard Bank of South Africa absorbed the African Banking Corporation in 1920.

The National Bank of South Africa took over the Bank of Africa in 1912 and the Natal Bank in 1914.

Barclays Bank (Dominion, Colonial, and Overseas) subsequently incorporated the

National Bank of South Africa in 1925. The Netherlands Bank of South Africa, although it is smaller than the two mentioned, is nevertheless of considerable importance, and has branches in the most important centres.

The Union. The year of the succession of King George V was notable in the annals of South Africa for the event of the greatest importance in her history, namely, the constitution of the Union of South Africa, which *inter alia* had the effect of bringing under one authority the treasuries of the

different provinces constituting the Union. Revenues from all sections of the Union were vested in the Governor-General in Council, and this consolidation of the financial and fiscal interests of the provinces tended to lighten very considerably the administration work of the commercial banks. This inauguration of the Union, producing as it did greater financial and commercial stability, helped very considerably the progress of the banking



STANDARD BANK BUILDINGS, PRETORIA

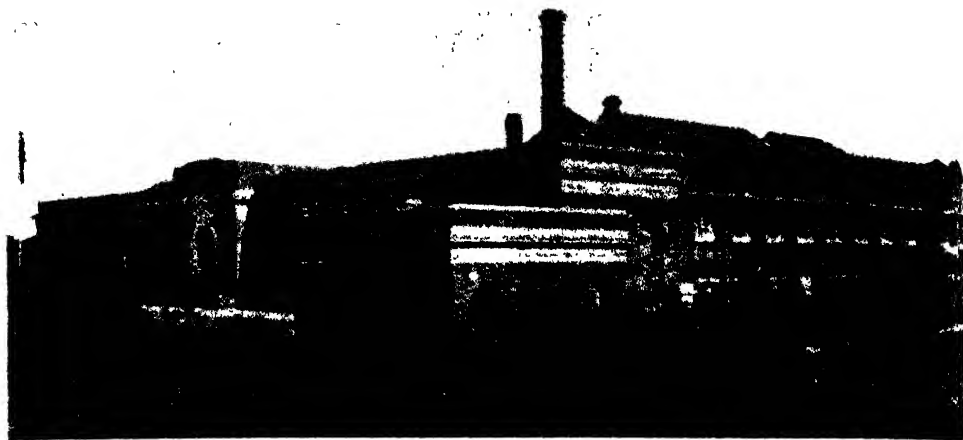
Branches in every town or centre of importance in South Africa have been opened by one of two British banks, the Standard Bank of South Africa, Ltd., and Barclays Bank (Dominion, Colonial and Overseas).

Photo: South African Railways

services which, though naturally checked to some extent by the World War, was renewed on the cessation of hostilities.

The Reserve Bank. Another eventful happening in the history of the Union was the establishment at Pretoria of the South African Reserve Bank which occurred on 30th June, 1921, under the authority of the Currency and Banking Act, No. 31, of 1920. The capital of the Reserve Bank was fixed at £1,000,000, no stockholder other than a subscribing bank or the Treasury being allowed to hold more than £10,000 of the capital stock.

The Reserve Bank has the sole right to issue bank notes in the Union for a period of twenty-five years; these notes are legal tender even when tendered by the bank itself. The note issue has to be secured to an amount of not less than 50 per cent of gold, of which not more than one-half may be held outside the Union, and



THE MINT, PRETORIA
Photo: South African Railways

by a first charge on all the assets of the bank.

Every bank transacting business in the Union is required to hold reserve balances in the Reserve Bank equal to at least 10 per cent of its demand liabilities in the Union other than notes, and 3 per cent of its time liabilities to the public in the Union. On 30th June, 1922, all other banks were prohibited from issuing or re-issuing bank notes.

It may be of interest to quote the Reserve Bank figures as at 31/12/1936—

	31st December 1936
<i>Liabilities—</i>	£
Notes in circulation	16,416,043
Bankers' deposits	22,451,310
Government deposits	1,666,144
Other deposits	3,017,134
<i>Assets—</i>	
Gold at standard value	24,634,513
Foreign bills	10,793,933
Loans to Government	800,000

That the Government were unable to maintain their policy of adhering to the Gold Standard was due to the very serious flight of currency from the Union to England, after Britain forsook it in an effort to recover from the World depression. This transfer of funds was attributable to the high premium in exchange in terms of British sterling. There arose a one-sided exchange position which quickly affected adversely the large community depending for their livelihood on the export of South African produce to the principal market—Great Britain.

After December, 1932, when the South African Government relieved the Reserve

Bank of its obligations to meet its notes in gold and the country automatically came off gold, normal business conditions within the Union were quickly established. Since that time the prosperity of the country has increased year by year.

It must be appreciated that this condition of prosperity has been brought about mainly by the record activity in the gold mining industry, and it is likely that favourable conditions will continue so long as the price of gold remains at a high level.

There is a good supply of money in South Africa; at 31st December, 1936, the total deposits with the commercial banks were £95,000,000, discounts and advances being returned at £53,000,000, being a percentage to total deposits of £56 4.

National Budget. The fifth Budget of the Coalition Government was presented by the Hon. N. C. Havenga, Minister of Finance, on the 15th March, 1937, when he referred to the further improvement in the economic conditions in the Union which were illustrated in the gratifying excess of the revised estimate for the current financial year.

The 1936-37 Budget was based on an estimated revenue of £37,787,000, and an estimated expenditure of £37,659,026, leaving an anticipated surplus of £127,974. Actually for the year ended 31st March, 1937, the receipts were approximately £42,550,000, and the expenditure was £38,900,000, leaving a surplus of £4,350,000.

This surplus is to be spent as follows—

	£
Redemption of Natal 4% Loan	2,850,000
Transferred to Loan Account for Capital Expenditure	2,150,000
	<hr/>
	£5,000,000

On the present basis of taxation, the revenue for the year 1937-38 is estimated to yield £43,250,000, while the Finance Minister is budgeting for an expenditure of £39,700,000, or £650,000, less than the estimate for the year ended 31st March, 1937. The estimated surplus for the coming year should, therefore, amount to £4,350,000, and it is proposed to dispose of the sum principally on the following items—

Remission of Customs Duties	£ 650,000
Increase in Old-age Pensions	750,000
Native Development Fund	233,000
Transfer to Loan Account	1,100,000
Balance to meet Capital Expenditure from Loan	1,500,000

The Finance Minister announced that during the last three years the annual public debt charges had been reduced by an amount slightly in excess of £1,300,000, and in view of the very large amount of funds in the Union for which, in existing circumstances, ready investment was difficult to find, the Treasury had in view further important loan operations.

At the beginning of the last financial year the public debt of the Union was £274,000,000. At the close of that year it had fallen by some £23,000,000 to £251,000,000. With the repayment of two of the London loans the external debt of the Union will have been reduced to approximately £104,000,000, which is about £2,000,000 below that at which it stood at the date of the Union.

Mining Taxation. The system of gold-mining taxation has been radically altered. The old scheme, consisting of a normal tax, excess profits tax and surtax, with its complicated distinction between "standard" profits and "excess" profits, has been scrapped. There is now one tax, which is known as the gold-mines income-tax, and which will be levied exclusively on profits.

The Finance Minister stated that the Union Government accepted the view that the gold-mining industry was now stabilized on a new basis, and that the time for experimental and emergency taxation had passed. The Government were, therefore, prepared to adopt a system of taxation more in keeping with the settled state of the industry. The new system is expected to produce virtually the same amount of revenue as the previous method of taxation would have produced under existing conditions.

Acknowledgment is made to the *Financial Times* for permission to reprint certain banking figures which appear above.

BANTU. See article, Vol. I.

BARNATO, BARNEY (1852-1897). Born in London; son of a Jewish shopkeeper,

who rose to a position of considerable wealth. At the age of 21 Barnett, as he was then named, joined his elder brother Henry in Kimberley, and opened a small store. Within three years he had saved enough to take a financial interest in Kimberley diamonds, and in 1881 he floated his first company. He took an active part in politics, and in 1888 was elected by Kimberley as a representative in the House of Assembly at the Cape. The following year he formed a gold-mining company on the Rand, and later founded the Barnato Consolidated Mines Company and the Barnato Bank. He played a prominent part in the 1895 gold boom on the Rand. He committed suicide by drowning.

BEIT, SIR ALFRED (1853-1906). Financier. Son of a wealthy Hamburg merchant; he emigrated to Kimberley in 1875 as a diamond buyer. In conjunction with Sir Julius Wernher he acquired a leading position in the diamond fields. He formed a close association with Cecil Rhodes. On 30th October, 1888, Lobengula, the Zulu chief-tain, signed the Rudd concession which gave Rhodes and Beit the monopoly of the minerals in his territory, and in the following year Rhodes and Beit formed the De Beers Consolidated Mines, Ltd. In these subsequent operations he amassed enormous wealth. He was one of the original directors of the British South African Company. After the Jameson raid, he, together with Rhodes, was censured by the House of Commons Commission of Inquiry. Beit endowed the professorship of Colonial History at Oxford in 1905, and gave £100,000 to establish a University at his native city of Hamburg, and £200,000 for a University at Johannesburg. He left £1,200,000 for the establishment of the Cape to Cairo railway and the development of the telegraphic and telephonic system.

BEIT, SIR OTTO (1865-1930). Financier and philanthropist, younger brother of Sir Alfred Beit. Otto Beit went out to Kimberley in 1890 and later to Johannesburg, where he took an active part in the direction of the gold industry. On the death of Alfred Beit, Otto

continued the work commenced by his brother in opening up the country and



SIR OTTO BEIT
Photo: Topical

in assisting education. He gave liberally to institutions connected with medical research. He was nominated by the Crown to be a member of the governing body of the Imperial College of Science and Technology. Sir Otto was a director of the British South African Company and of the Rhodesian Railways, Ltd., and a Rhodes Trustee.

BLOEMFONTEIN. See article, Vol. I.

BOTHA, LOUIS. South African statesman. See article, Vol. I.

BRAND, SIR JAN HENDRIK (1823-1888). President of the Orange Free State from 1864 until his death. He was the son of Sir Christoffel Brand. He became Speaker of the House of Assembly, Cape Colony.

Brand studied law and was called to the English Bar in 1849. He practised in the Supreme Court, Cape of Good Hope. In 1858 he was appointed Professor of Law in South African College. During his twenty-five years Presidency of the Free State he aimed at establishing peace and unity, and he is generally described as "the man who made the Republic." In the early stages he had to fight two wars with the Basutos who were continuously threatening his boundaries, and these he conducted successfully. In 1871 he was invited to become President of the Transvaal, thus to unite the two Dutch Republics, but in deference to the views of Great Britain he declined. He vigorously contested British claims to the diamond fields in his territory and his view was upheld by a legal decision. In 1887 he refused to put his burghers at the disposal of Kruger who desired a close alliance with him. He was a keen advocate of confederation.

BURGERS, THOMAS FRANÇOIS (1834-1881). President of the South African Republic from 1872-1877. He graduated in theology at Utrecht, and was appointed a minister of the Dutch Reformed Church at Hanover, Cape Colony. In 1864 he was suspended by the Synodical Commission for heretical opinions, but his case ultimately went to the English Privy Council who pronounced in his favour. When Pretorius was forced to resign, the people of the Transvaal, in 1872, elected him as President. He was somewhat tyrannical and strove vigorously to create an independent South African Federal Republic free from British influence. He fought an unsuccessful campaign against the powerful native chief Secocoeni, and so chaotic did the affairs of the Transvaal become, that Shepstone, in 1877, declared it essential to annex the territory. Burgers acquiesced privately, but protested publicly.

BURTON, Rt. Hon. HENRY (1866-1935). Statesman, educated at St. Andrew's College,

Grahamstown, and called to the Bar at Kimberley in 1892. Represented the Albert Division in the House of Assembly from 1902 to 1915; Minister of Native Affairs (1910-12), and Minister of Railways and Harbours (1912-20). In 1915 he was elected representative of the Klip River Division of Natal. For a period in 1918 he was a member of the Imperial War Cabinet, and in 1923 he was a representative of South Africa at the Imperial Conference and at the Economic Conference. He was Minister of Finance from 1920 to 1924.



R. HON. HENRY BURTON
Photo: Central

BUSHMEN. See article, Vol. II.

BUXTON, 1ST EARL OF (1853-1934). See GOVERNORS-GENERAL, Volume IX page 4974.

CALEDON, 2ND EARL OF (1777-1830). He was appointed civil governor of the Cape in 1807, and held office for four years. Caledon was strict in his rule but tried to befriend the Hottentots, by giving them the benefits of European law. He abolished the remnants of the tribal system and compelled the Hottentots to find fixed abodes and to cease roaming. After his visit to the eastern frontiers he specially instructed the circuit judges to give sympathetic hearing to the Hottentot complaints. Caledon River and the district of Caledon are named after him.

CAPE JASMINE. See GARDENIA, Vol. III.

CAPE OF GOOD HOPE. See article, Vol. II.

CAPE-TO-CAIRO RAILWAY. See article, Vol. II.

CATHCART, SIR GEORGE (1794-1854). High Commissioner and Governor of Cape Colony from 1852-54. He succeeded Sir Harry Smith as Governor, and early brought the Kaffir war to a successful end. He established European settlements at Queenstown, Theopolis, and on the Kat River, and set up an Executive Council as part of the first Constitution at the Cape. He was killed in the Crimean War, at Inkerman.

CETEWAYO (d. 1884). King of the Zulus, eldest son of King Umpande (or Panda) and nephew of Dingaan. Cetewayo defeated and killed his younger brother in 1856, and in the following year began to rule, though his father retained the title of King. Upon the death of his father in 1872 he became King

himself. Relations with Natal and the Transvaal were rather strained, and he played off one against the other in the hope of recovering the strip of territory along the Blood River, ceded to the Transvaal by his father. He made frequent raids into British possessions, and in 1875 he was sent an ultimatum. This he ignored, and on the outbreak of hostilities he defeated British forces at Isandhlwana but was held off at Rorke's Drift and later captured at Ulundi. In 1883 Cetewayo was restored as King, though his kingdom was reduced in size. War soon broke out again and he was driven out. He died at Ekowe.

CLARKSON, CHARLES FRANCIS (born 1881). Senator and Minister of Posts, Telegraphs, and Public Works. Educated at Durban and York (Natal), he has been a member of the Provincial Council for Victoria County, and a member of the Executive Council, Natal. He was included by Hertzog in the Coalition Government of 1933 as leader of the Natal Members of Parliament.

CLIMATE: The climate of the Union of South Africa is cooler than that usually experienced in similar latitudes of the northern hemisphere. Though South Africa lies between latitude 22 degrees and 35 degrees south, and therefore on the edge of the tropics, its contiguity with the Atlantic and Indian Oceans and the elevation of its plateau lower the general temperature to the extent of between 10 degrees and 25 degrees throughout the year.

Tropical conditions occur north of Pretoria in the Transvaal; in the Kalahari region, semi-desert conditions are to be found, to the east and south of Pretoria the climate is classified as temperate. Between the plateau and the sea, along the western coast, hot desert conditions prevail; on the south-west and along the coast north of Port Elizabeth, conditions are warm and temperate.

The warmest place in the Union is at Goodhouse, on the Orange River in Cape Province, where the yearly mean temperature is 73.5 degrees, while the coldest is Disa Head, at a height of 2496 ft., on Table Mountain, where the yearly mean is 54.7 degrees. Thus there is an average difference of only 18.4 degrees between the warmest and coldest places in the Union.

The annual mean temperatures at various stations are as follows—

	Altitude feet	Mean Temp.
Capetown	40	62.0
Port Elizabeth	181	64.0
Kimberley	4042	64.8
East London	147	64.9
Aliwal North	4352	59.2
Durban	50	70.8
Hartismuth	6100	56.6
Bloemfontein	4615	61.0
Johannesburg	5925	59.1
Pretoria	4350	63.5
	Average	62.6

These temperatures are practically equivalent to the summer temperature of England, and about the same as the best known holiday resorts in the Mediterranean. December to February constitute the summer months, while winter is from June to August.

The following figures indicate the normal fluctuations in temperature—

Capetown: monthly mean temperature, ranging from 54.9 in July to 70.1 in January.

Bloemfontein (Orange Free State, High Veld): from 63.4 in July to 73.3 in January. Durban (Natal, Palm Belt). from 63.4 in July to 75.9 in February.

Johannesburg (Transvaal, High Veld): from 49.5 in July to 68.2 in January.

East London (Cape Province, Thorn Veld): from 59.2 in July to 70.2 in January.

THE BIG KARROO
Annual rainfall is less than five inches
Photo. South African Railways

Barberton (Transvaal, Low Veld): from 60.2 in July to 73.8 in January.

Maximum mean temperatures of 90 degrees and over are mostly confined to the months of December, January, and February, and are found in Natal, the eastern Low Veld of the Transvaal, northern districts of the Cape Province, and the west coastal area of the Cape Province.

Temperatures of 90 degrees to 95 degrees are of frequent occurrence in the summer months, and occasionally temperatures of over 100 degrees occur. These high temperatures are usually followed by thunderstorms. In January, 1903, 125 degrees was recorded at Main.

At the other extreme, in July, 1926, 5.6 degrees was recorded at Carolina in the Transvaal.

Frosts are liable to occur for a period of more than 100 days per year on the greater part of the west and southern regions of the plateau, but frostless belts exist on the east and west coasts.

Throughout the year there is a remarkable record of sunshine, Capetown having 66 per cent of the possible number of hours, averaging 7.5 hours daily; Johannesburg 73 per cent, averaging 8.7 hours daily; Kimberley 78 per cent, averaging 9.4 hours daily.

The Union is divided into three meteorological regions: (1) the summer rainfall area, in which 50 per cent of the total rainfall is from October to March; (2) the winter rainfall area; (3) and the constant rainfall area, having its precipitation equally divided between the two periods.

In the west of the Cape Province winter rains begin in April and continue to August, while during the five months from November



IN THE NORTHERN TRANSVAAL
The Entabeni mountains are in the background
Photo. South African Railways

to March, comprising the whole of the summer, the rainfall is slight and uncertain. The constant rainfall area consists of a belt along the south coast. Summer rains are common to the remainder of the country, being spread over the period from September to March.

Generally, on the northernmost parts of the east coast, the rainfall is more than 30 in.; in the Orange Free State and the Transvaal, 15 to 30 in.; the major part of Cape Province has less than 15 in.; and the Namaqualand region less than 5 in.

Deluges are not infrequent. Quantities of 5 in. and over have been recorded in one day on the south and south-east coasts, whilst 10 in. to 18 in. have been registered near Durban. Rates exceeding 10 in. of rain per hour have been reached for a few minutes and as much as 4 in. of rain has fallen in 1 hour. South Africa is visited from time to time by droughts, which are occasionally of great severity.

Snow falls three or four times each winter on the mountains and in the east of Cape Province.

COMMUNICATIONS AND TRANSPORT.

During the first 200 years, after the Dutch settlement of the Cape in 1651, the ox wagon was South Africa's principal, if not its only, means of transport. Capable of carrying from 4 to 6 tons, and drawn by 16 or 18



CACTUS ALOES ON THE LITTLE KARROO
Only moisture-conserving plants can live in this waterless land.

Photo. South African Railways

oxen, the picturesque "ship of the veld" made long-distance travel possible in a country of vast spaces, unequipped with roads other than mere veld tracks. It was slow, but it was sure, and for long it had no serious rival. The earliest settlers under van Riebeeck left it on record that among their first acts was to obtain cattle by barter from the Hottentots, and to use the oxen both for farm work and for the carriage of produce.

In fact, transport riding with ox wagons became an important industry during the nineteenth century, for the Boer—often much more a hunter than a farmer—readily took up this form of making a livelihood when game became scarce in his neighbourhood. In many cases his ox wagon was virtually the home of the transport rider and, sometimes, of his wife and children.

Less than fifty years ago, when the great gold and diamond industries were being established, and when many towns of considerable size and importance had long been in existence, the ox wagon was still supplying the service on which industry and commerce both depended for their development. As late as 1890, in fact, the Transvaal and Orange Free State possessed no railways, the lines from the Cape and Natal not then having penetrated beyond the borders, so that the gold mines of the Rand depended on wagon transport for their machinery equipment and general stores.

Horses also played a part from the earliest days, as well as mules and donkeys, and even the camel has proved its value. It is on record that a fine Australian-bred camel used to carry the South Kalahari mail, doing the journey of 110 miles regularly in eight hours.

During the last century, coaching services were also developed between town and town, and for the carriage of mails, both horses and mules being used. The Zeederberg services of this character were especially famous, and at one time this firm tried the novel idea of using zebra teams, but the experiment failed owing to the lack of stamina of the animals.

Throughout the lengthy period during which South Africa was completely dependent upon animal transport, however, it cannot be said that adequate attention was paid to road construction, though some fine examples in comparatively short stretches were created. Little more than ten years ago a Government Committee reported that the Union was in large sections of its territory much behind other countries in this respect, and advised the construction of a system of national main roads. In 1935 the National Roads Bill was introduced in the Union Legislature, a sum of £500,000 being allotted

for the purpose, while a tax of 3d. per gallon on imported petrol was imposed for upkeep. A five years' programme was inaugurated, during which the total expenditure was estimated to exceed £11,000,000, and five main routes covered: Capetown to Durban, via East London; Rand to East London, via Kroonstad and Bloemfontein; Capetown to the Rand, via Beaufort West and Kimberley; Rand to Durban, via Volksrust and Newcastle; and Pretoria to Messina, via



IN WYLIE'S POORT

Water-eroded pass in Zoutpansberg mountains, northern Transvaal.

Photo: South African Railways

Pietersburg. There are already some 74,000 miles of main roads under the control of the several Provincial authorities.

Railways. Railway construction was started in 1859 by a private company which began a line from Capetown to Wellington. This line, however, took three years to complete, and, in the meantime, the short Durban-Point line in Natal was built and was opened for traffic in 1860.

Not until 1874 did railway construction on any scale begin in the Cape Colony, and it was two years later before Natal became the scene of serious development. By 1885 the line from Capetown had reached Kimberley; five years later, Bloemfontein was linked up; in 1892 the Rand and Pretoria

were in direct railway communication with Capetown, and with Lourenço Marques in 1894, and with Natal in 1895.

In the Transvaal, progress was at first slower than in the British colonies, and until 1890 the lines in the latter were not carried over the border of the Dutch Republic. Each Colony operated its own system, and the Cape colony also built and worked certain lines in the Orange Free State, which, however, were taken over by purchase by the latter in 1897. The main line north also

occurred within the Union between 1920 and 1930. In recent years, however, there has been less building, the Government having followed a policy of developing outlying areas by means of road motor services in conjunction with the railways.

The standard gauge of line used throughout South Africa is 3 ft. 6 in., with the exception of some 884 miles of 2-ft. gauge.

The South African system may well claim to be one of the best-managed in the world. The system gives excellent public service



OX WAGON IN THE DRAKENSBURG, NATAL

Photo: South African Railways

reached Bulawayo, in Rhodesia, in 1897 as a result of private enterprise.

With Union in 1910 came also the unification of all the systems under one control, that of the South African Railways and Harbours Board. At that time the mileage in existence was 7041, and had cost £63,116,000 to build, while it carried rolling stock worth £13,664,000.

To-day, the mileage of lines open in the Union is 13,865, representing an expenditure of £151,234,778.

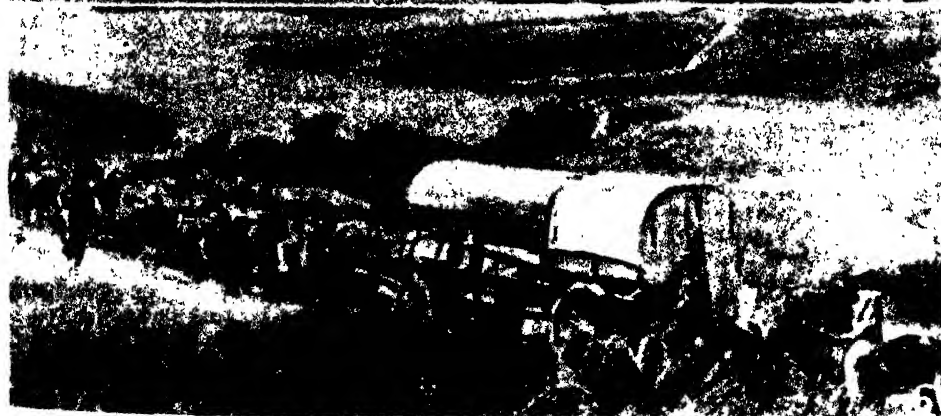
The dream of the late Cecil Rhodes—an unbroken railway from the Cape to Cairo—has not yet been fully realized, but Capetown is now directly linked with Port Francqui on the Lower Congo, a distance of over 3300 miles.

In 1915 the South-West African railways, which had been commenced in 1897 under German control, were taken over, and considerable constructional development also

and, what is more, works at a substantial profit. In the financial year 1936-37 the revenue earned was estimated at £32,759,000 and the expenditure at £28,275,178, leaving a surplus of £4,483,822 to hand over for the relief of the taxpayers.

With regard to the quality of the service, trains of *de luxe* character run between the principal coast and inland centres. The "Union Limited" covers the 956 miles between Capetown and Johannesburg in 334 hours, including stoppages.

One result of the problem of working over difficult gradients has been to give railway electrification an early and exceptional importance. This is especially true in Natal, where electrification began in 1926. At the beginning of 1937 practically the whole line from Durban to Johannesburg was nearing the completion of its electrification. In 1936 the electrification of the Pretoria-Germiston line in the Transvaal was authorized, and



TRANSPORT

1. Farmer's ox wagon on an inland road.
2. Junker 'plane in the service of the Government-owned South African Airways. In 1935 S.A. Airways and Imperial Airways carried nearly 11,000 passengers to or from places in the Union.
3. Rickshaw boys at Durban. They are Zulus and are very picturesque.
4. Electric train on main line in Natal.
5. "Union Ltd." express train in the Hex River Pass.
6. Trekking by ox wagon in rough country.

Photos: South African Railways

similar work is being done on the suburban lines on the Witwatersrand. In the Cape Peninsula several suburban lines have been electrically operated for some years.

Progress of Air Transport. There is obviously great scope for the development of aviation in South Africa, with its vast spaces of open country and long distances between centres. The first important step undertaken was in 1925, when the South African Air Force carried the ocean mails between Capetown and Durban for several months. This was a purely experimental service, and it was not until August, 1929, that Union Airways commenced to operate commercial services. Early in 1934 the Union Government took over control of all services apart from taxi services operated by private companies, of which there are several on the Rand and at Capetown. The South African service links up at Durban with the Imperial Airways service to and from Great Britain, connections being made which provide four weekly air mails each way between Capetown and Johannesburg. During the year 1935-36 the expenditure on air services was £128,984 and the revenue £64,985, leaving a deficit of £63,999.

Sea Communications of South Africa. These are mainly provided by a group of British and Continental lines. The Union-Castle Mail Steamship Co. Ltd. is the most prominent, and holds the mail contract. An outstanding feature of the service was the introduction in 1936 of large motor vessels, which enabled the voyage between Southampton and Capetown to be reduced to less than fourteen days.

There are nearly 300,000 motor vehicles licensed in the Union, and the number is growing yearly.

South African municipal transport services have also reached a high standard of efficiency. There are at least ten of the larger centres where electric tramway systems are being operated on lines which would do credit to any European city, and there is an equal number where municipal motor omnibus services are being run. Incidentally, the trolley omnibus has been introduced in South Africa, and has established itself in competition with other forms of municipal service in several centres.

CORY, SIR GEORGE EDWARD, M.A., D.Litt., F.R.H.S. (1862-1935). He was born in London and educated at St. John's College, Hurstpierpoint, Sussex, and King's College, Cambridge. He went to South Africa in 1891, and became Vice-Principal of Grahamstown Public School. Later he was appointed Government Lecturer in Chemistry and Physics at St. Andrew's, and then Professor of Chemistry at Rhodes University College,

Grahamstown. He also served as Public Analyst for the Eastern Province, C.P., and held the position of Hon. Archivist to the Union Government for some years prior to his death. His book, *Rise of South Africa*, established his reputation as the country's leading historian.

CRADOCK, SIR JOHN F. He was the Governor of the Cape Colony from 1811 until 1814. In 1812 the Fourth Kaffir War broke out, and the Kaffirs were driven across the Fish River. Grahamstown and Cradock were founded in the same year, the latter being named after the Governor. Another important event during his regime was the cession in perpetuity of the Cape to England, which occurred in 1814.

CRESWELL, COLONEL F. H. P. (born 1866). Statesman and Labour leader. He was born at Gibraltar and educated at Bruce Castle, Derby School and the Royal School of Mines, and was engaged in mining in Venezuela and Asia Minor before going to the Transvaal in 1893. Before the Boer War he was the manager of the Durban Deep Mine, but when hostilities broke out he took commissioned rank with the Light Horse. In 1901, when manager of the Village Main Reef on the Rand, he took a prominent part in the opposition to Chinese labour, on the ground that only by a white labour policy could European civilization be saved from dependence on black barbarism. When in 1905 the various Labour groups were drawing together under his leadership, Creswell was insistent that the ratio between white and coloured labour should be maintained. During the World War he raised the Rand Rifles Regiment. He took part in the south-west African campaign and also fought in east Africa. In 1924 Creswell was made Minister of Defence, and in 1929 he became Minister of Labour.

CRONJE, PIET ARNOLDUS (1840-1911) A Boer General whose reputation for tenacity was greater than his reputation for strategy. In 1880 he resisted a distraint for non-payment of taxes upon the goods of a Boer farmer who had refused to pay, and became the leader of an insurrection. In the first Boer War he held the rank of a commandant and besieged a British force at Potchefstroom in 1881. He next distinguished himself by commanding the forces that ended the Jameson Raid at Doornkop. In the Boer War of 1899 he was General Commandant in the western theatre and successfully checked the British forces at Magersfontein. He was unable, however, to prevent the relief of Kimberley and ultimately he was defeated by Lord Roberts at Paardeburg.

CULLINAN, SIR THOMAS MAJOR (1862-1936). Chairman and managing-director of the Premier Diamond Mining Co., Ltd. He was born at Elands Post, and educated at Alwal North, C.P. He was the discoverer of the Premier Diamond Mine in 1902, on which property the Cullinan diamond, the largest white diamond known, was found in 1905. He represented Pretoria North in the first Transvaal Parliament in 1906, and sat for the same constituency in the first Union Parliament in 1910.

CURLEWIS, JOHN STEPHEN (born 1863). Judge of Appeal. Son of the Rev. J. F. Curlew, he was educated at the Diocesan College, Rondebosch, and Cape University. After a short period in the Cape Civil Service, from which he resigned in 1883, he became an advocate in the Supreme Court of Cape Colony and in the High Court of the South African Republic. During the Boer War he was President of the Special Criminal Court at Johannesburg; in 1903 he was made Puisne Judge of the Supreme Court of the Transvaal; in July, 1924, Judge President of the Transvaal Provincial Division of the Supreme Court of South Africa; in 1927 he received an appointment as Judge of Appeal. From June to December, 1933, he officiated as Governor-General during the absence, on leave, of Lord Clarendon.

DE VILLIERS, JOHAN HENDRIK (1842-1914). First Chief Justice of the Union of South Africa. Of Huguenot descent, de Villiers was educated at South Africa College, Utrecht, and Berlin. He was intended for the Dutch Church, but preferred a legal career, and after studying at the Inner Temple, was called to the English Bar in 1865. The following year he was called to the Cape Bar. Entering politics in 1867, he secured election as a Member of the Legislative Assembly, and became Attorney-General in the Molteno ministry in 1872. After serving as chairman of the Judicial Reform Commission, he was, in 1877, made a knight. As chairman of the Law Amendment Commission (1878), and of the Diamond Laws Commission (1887), his judicial abilities marked him out for further promotion. In the troublesome periods before and after the Boer War he used his considerable influence on the side of peace and unity among the white races, and when in 1910 he was created a baron and opened the Appellate Division as first Chief Justice of the Union, it was recognized that the honour was well merited. As chairman of the National Convention he played an important part in drawing up the Union's constitution.

DE WAAL, J. H. H. (born 1871). Born at Bakkerskloof and educated at the South

African College. Called to the Cape Bar in 1897; was elected as a Nationalist in 1915 as a representative for Picquetberg. He was the mover of a resolution in 1918 that resulted in Afrikaans being introduced into the civil service in lieu of High Dutch. From 1924 to 1929 he was Deputy Speaker, and from 1929 to 1933 (May) he was Speaker. A prolific writer, his output includes many works on history, languages, and grammar, as well as fiction.

DE WET, CHRISTIAN (1854-1922). A Boer General. De Wet entered the Transvaal Volksraad in 1885 and was also a member of the Orange Free State Volksraad from 1890 to 1898. During the Boer War he was Commandant-in-Chief of the Free State forces, and gained a high reputation for his guerrilla tactics. He made attacks whenever he dared, skilfully retreating, evading the forces of five British generals, perfecting a type of warfare that kept the British engaged for fifteen months after Lord Roberts, thinking the war was over, had left for Europe. Two typical engagements were those of Sannah's Post and Reddersburg, in which he surprised and destroyed British detachments. After the war, he joined the Fischer Government of the Orange River Colony and played a big part in bringing about the Union. In 1912 he supported Hertzog's break with the South African Party, and helped to form the National Party. On the outbreak of the World War he took part in the rising, leading forces from the Orange Free State. When they were defeated, de Wet escaped on horseback into the Kalahari desert, but was pursued and captured. He was tried for high treason, sentenced to six years imprisonment, and fined £2000; but he was released in 1915.

DINGAAN. A Zulu chief, known in history for his treacherous murder of Retief on 6th February, 1838. Retief, with sixty-five Europeans and about thirty Hottentots as servants, visited Dingaan to request concessions of land. Dingaan received him with an outward show of hospitality, and pretended to give him territory in Natal. While Retief's party were taking refreshment, Dingaan's Zulus seized and killed every man, woman, and child. They then marched for eleven days to Weenan and massacred 41 white men, 56 white women, 185 white children, and about 250 coloured servants. Andries Pretorius with 450 men took the field against Dingaan. Dingaan attacked, but was utterly defeated, over 3000 Zulus being killed, the nearby river being so discoloured that it was called Blood River. This victory is still celebrated by the Boers every 16th December, which is known as "Dingaan's Day." Though Dingaan escaped

from Pretorius, he was once more defeated thirteen months afterwards, and was ultimately assassinated.

DUNCAN, SIR PATRICK (born 1870). See **GOVERNORS-GENERAL**, Volume IX, page 4974.

DURBAN. See article, Vol. III.

D'URBAN, SIR BENJAMIN (1777-1849). British General and Colonial Administrator. D'Urban was appointed Governor of Cape Colony in 1834.

Sir Benjamin was specially instructed by the Secretary of State to carry out three important measures. (1) to free the slaves; (2) to create a legislative council; and (3) to reduce expenditure on an extensive scale. He succeeded in achieving these tasks, and though his legislative council had little power, it was a step in the right direction. In 1834 and 1835 Kaffirs invaded British territory, but D'Urban drove them beyond the Keiskama River and formed a new province, called Queen Adelaide. His actions were viewed with disfavour by the British Government, and D'Urban was recalled in 1838. Durban was named in his honour.

EAST LONDON. A port of Cape Province, South Africa at the mouth of the Buffalo River, 130 miles east of Port Elizabeth. There are excellent berthing facilities, the working depth at the harbour entrance of the channel is 28.5 ft. In 1935, 820 ships of a total tonnage of 3,530,820 entered the port. Population in 1936 white, 31,301, total for all races, 60,550.

EDUCATION AND SCHOOLS. No more than any other country, ancient or modern, has South Africa been vouchsafed peculiar

illumination upon the true nature of education or the science and art of it. There, as elsewhere throughout the world, knowledge still far outruns wisdom, and this most fundamental of human concerns is still too much a political pretext and the plaything of vulgar expediency. It has, in spite of its singular opportunities, made no novel contribution to the subject, being content in the main to leave matters to bureaucratic control whereunder it follows the sober jog-trot of mediocrity, indubitably slow and dubiously sure.

It has, moreover, suffered somewhat from its isolation and its comparatively late start. It missed the great days of ecclesiastical foundations nor has private munificence most reprehensibly lax, made any real attempt to compensate therefor.

Yet the country's educational problems are of most unusual interest, poised as they are upon a dangerous edge that makes hastiness perilous, and yet will not long suffer delay. One arises from the political relationships between the principal white races, the other concerns the native and the so-called "coloured" races and this is beyond challenge the graver issue.

To consider the first point first, it is not difficult to see, though not so easy to justify how the Briton, with his pervasiveness and traditional prestige, puzzled and provoked unconsciously in the main, a people not pre-disposed to accept either trait placidly. On the other hand the Dutch, the earlier settlers and, like the British, "an old and haughty nation, proud in arms," and not unnaturally



BUFFALO HARBOUR, EAST LONDON, FROM THE AIR
Photo: South African Railways

apt to interpret goodwill as patronage, found rivalry irksome. Speaking of this characteristic in his countrymen in connection with the suppression of the Huguenot language and culture in the Cape, Mr. E. Malherbe, to whose writings this brief survey owes much, sees in it "the principle so often brought out in the history of South African education, that the characteristics and traditions of a section had to be given up in the interests of the larger group in order to have homogeneity and solidarity in the body politic." It is a just description in a wider reference than the educational, and raises the question whether the alleged gains have been wholly worth the sacrifice. At the same time many will agree with him in the belief that the prosperity of the land must ultimately rest upon an educational system wherein the best in both races is caught up and sublimed into a new unity.

To understand the present conditions requires some knowledge of the past. In the mid-seventeenth century a scant population was marooned in a savage and remote land, and education was a pastoral care administered throughout the regime of the Dutch East India Company by the consistory of the Dutch Reformed Church, with lay-visitors as instructors. Itinerant schoolmasters, poorer cousins to the poor hedge-schoolmasters in the old world and like them jacks-of-all-trades, played their supplementary parts and so, as things will in a make-shift world, a standard of literacy was maintained and even grew, so that in 1779 Capetown had its eight public elementary schools training some 700 children in the useful rudiments.

At the turn of the century, Commissioner-General J. A. de Mist, whom an English writer calls "one of the soundest educationalists of either the eighteenth or nineteenth centuries" devised a much fuller system with training colleges staffed by Hollanders, secondary schools, facilities for instruction in domestic arts and elementary schools in outlying places. He hoped in time to impose a new and higher standard of scholastic attainments upon entrants into the civil services, but he and his projects passed with the passing of the Cape into the hands of the British.

In an age when the old drastic notions of the rights of the conqueror still held, it was deemed natural and just that he should impose his language upon the people. "Import English teachers and the next generation will be English" as a general, with right military trenchancy, declared. But in the main education was left to take care of itself. Thus in the second decade of the century Sir John Cradock was moved to give financial

aid to schools mainly staffed from Britain, but administration was sketchy and control lax. Some fifteen years later local bodies were set up to attend to such concerns as examinations and buildings, recommendations for appointments and fees to defray expenses. It was, however, bootless work, and the main outcome was the establishment of numbers of private schools, many of them devised to secure for the people that instruction in Dutch for which the established schools made only the most meagre and most grudging provision.

Yet, fumbling as they were, these early measures mark the real beginnings of South Africa's educational system. John Fairbairn, fearless and indefatigable pioneer in



RHODES COLLEGE, GRAHAMSTOWN

Photo: South African Railways

more than one field of social and political progress, joined with the poetaster, Thomas Pringle, in setting up an academy in Capetown, and it is significant of the iniquities of a proconsular regime that when he incurred the displeasure of the Governor Somerset, his school was closed down and those who supported it made aware of the vice-regal disapproval.

But governors pass while peoples remain, and in 1839 Fairbairn saw the fulfilment of his proposal for a department of Education, though, almost of course, after a penurious fashion. But the project was fortunate in its first superintendent, James Rose Innes, who with heroic devotion shouldered the multifarious and heavy duties of the post without assistance. His first tour of inspection found eleven schools with barely 500 pupils; by 1854 he had brought the total to thirty. Assistance was given to mission-schools—most useful ancillaries as teachers—grants made to rural schools and, a daring suggestion, a local education rate was proposed.

The granting of representative government in that year brought a new spirit into the colony. Prosperity increased and interest in the question of education grew.

A succession of committees made recommendations tending towards greater elasticity in administration and closer attention to local needs, and in spite of irresponsible parliaments and other setbacks, the present system was gradually fashioned, though it was not till 1905 that compulsory attendance and authority to levy special education rates locally were given statutory sanction.

committees were instituted to look after the needs of the rural population. In the following year the Executive Committee of the Volksraad assumed control, and the state of affairs educationally began to mend. But how slowly and imperfectly is shown by the fact that when in 1889 a sum of £20,000 was voted for the creation of a university, the project came to nothing, because there was



CAPETOWN UNIVERSITY

The slopes of Devil's Peak and of Table Mountain are in the background

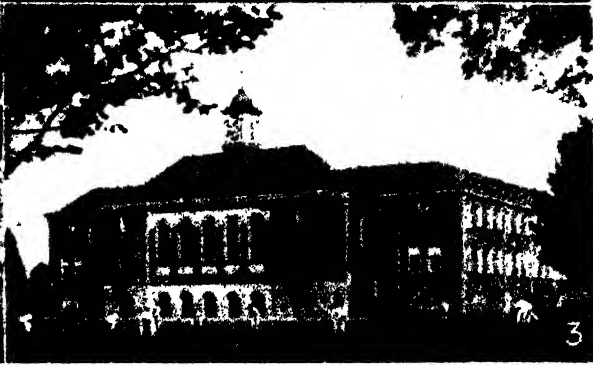
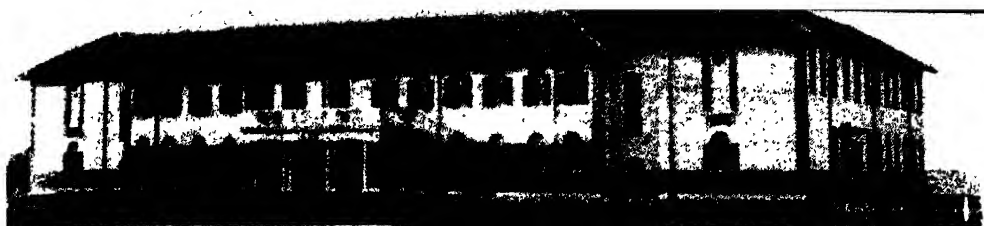
Photo: South African Railways

Meanwhile in what were ultimately to become the other three provinces of the Union the history of education had been following a course even more arduous and troubled than that in Cape Colony. Beyond the Vaal the Trek Boers and their first descendants, a sparse band, with most meagre resources, were absorbed in grim struggles for existence against hostile nature, hostile natives and domestic difficulties. Again the Church did what it could for the education, religious and secular, of its people, but it was uphill work. When the three townships of Potchefstroom, Rustenburg, and Lydenburg came into being, they naturally absorbed what scant facilities were available, and it was not till 1866 that local school-

no adequate foundation of secondary and primary training.

The discovery of gold upon the Reef and the influx of a numerous and mixed throng of outsiders overtaxed the means and statesmanship of the Dutch government, and then the criminal blunder of the Raid confounded everything. In 1895 the English-speaking community on the Rand took its own measures to secure the educational facilities it desired and instituted the Council for Education for the Witwatersrand, with funds to subsidize building schemes and more efficient teaching, especially in English, and make grants to poor schools.

The end of the Anglo-Boer war saw the former republican system swept away to



CENTRES OF EDUCATION

Problems of unusual interest arise from the political relationships of the white races and from the position of the "coloured" races. Bureaucratic control predominates. 1. Selborne College, East London. 2. Carpentry class at Vereeniging domestic school. 3. King Edward VII School, Johannesburg. 4. Afrikaans Medium School, Potchefstroom, Transvaal. 5. Witwatersrand University.

Photos: South African Railways

give place to a strictly centralized and uncompromisingly English control. Again private enterprise tried to readjust the balance. In both the Transvaal and the Orange River Colony the Dutch Church, with active assistance from Holland, took the lead in establishing the Christelik Nasionaal Onderwys, whereby in a significantly short time more than two hundred schools under the control of parents' committees were enabled to give instruction "in a Christian national spirit and adapted to the needs of the South African nation." But the rigour of the Milner rule passed and in 1905, under Lord Selborne, central denomination was relaxed and conditions liberalized. The improvement was swift and far-reaching. The operation of the Christelik Nasionaal Onderwys was largely suspended, and many schools came under the Government.

In spite of inevitable undertones of the old language antagonism, the outlook seemed not unpromising, and not a few on both parts looked with General Smuts to a near reconciliation of racial discords through the mingling of the younger generations in the same schools. Unhappily this fair hope has been overclouded by the establishment of "single medium" schools, both secondary and primary, throughout the provinces.

The inauguration at the Union of a Minister for Education marked an advance, though with characteristic timidity the training colleges and ordinary primary and secondary schools were left under provincial control, a wasteful and confusing anomaly that all true educationalists wish away.

It was in 1924 that the Union Department of Education took control of vocational education, including technical institutes or "colleges" as they are confusingly called, schools for training in trades, domestic crafts and the principles of agriculture, and special centres for the deaf and blind. It also administers the "industrial" schools whereto juveniles are committed under the Children's Protection Act on grounds of destitution, neglect or delinquency. But young mental defectives fall under the charge of the Commissioner for Mental Hygiene, an officer under the Department of the Interior.

Vocational courses are in the main post-primary, the exceptions being industrial and special schools wherein the pupils are initiated into a trade or craft while following their ordinary scholastic training.

It is significant to note that the Union *Year Book* for 1934, the latest available at the time of writing, gives the average cost per head of technical college students as £42.92, while the expenditure per student in the thirty-six vocational schools works out at £61.11.

A special school for sub-normal children provides for about 950 cases, while centres in Plumstead, Johannesburg, and Durban afford educational facilities and convalescent care for about a hundred and twenty cripples and cardiopathics. But as the official survey says, "provision for handicapped children remains inadequate because there is no definite allocation of administrative responsibility for their training and education. The Union has made provision only for deaf and blind children." It is true that provincial authorities provide to some extent for sub-normal children and certain classes of the physically defective, but "considerable arrears remain to be overtaken."

The scattered beginnings of modern South Africa and its perplexed course through the unco-ordinated development of the four provinces have left their mark upon its university history. It began with the institution of a purely examining body in Capetown in 1858, which served to admit to degrees candidates from centres of secondary education like the Diocesan College outside Capetown (1849); Grey College Bloemfontein (1854); the seminary at Stellenbosch (1865); and the Huguenot College at Wellington (1874). In 1873 was set up the University of the Cape of Good Hope, modelled on the lines of the University of London as it then existed. This body operated, not unsatisfactorily, yet with the inseparable limitations of its kind, till 1916, when the self-contained universities of Capetown and Stellenbosch were incorporated and the dispersed colleges in Grahamstown, Maritzburg, Bloemfontein, Johannesburg, Pretoria, and Wellington were united into the federated University of South Africa. Potchefstroom followed in 1920.

This process of multiplication by fission has continued and may not yet have worked itself out. In 1921 it produced the University of the Witwatersrand, which, beginning in Kimberley as the South African School of Mines, went to Johannesburg in 1904 as the Transvaal Technical Institute, developed "Arts" classes and was renamed the Transvaal University College. In 1910 it became the South African School of Mines and Technology, in 1916 a college of the University of South Africa, and five years later its present independent status. In 1930 the sister college in Pretoria also hived off, so that the Union, with something over two million of white population has four independent universities and one federal university with five colleges. Staffs totalling, in 1934, 221 professors and 625 lecturers, including part-time professors, seem extravagant, and the dissipation of resources among so

many detached institutions seems to militate against their economical use, but local sentiment is as yet too strong to admit of efficient concentration.

Just and adequate provision for native education still awaits the solution of the wider problems of native administration, since no abiding system can be devised so long as there is no clear concept of the ultimate position of the black and coloured races in the body politic. Meanwhile the work has gone along lamely and fumblingly, and for long with most meagre sustentation, though latterly expenditure has been somewhat more liberal. A fixed annual grant of £340,000, with four shillings out of every pound of General Tax paid yearly by all adult natives is, in practice, the only source of financing this branch of the Union's responsibility. As Haarhoff and Currey say in the final chapter of *Coming of Age* (1930): "The General Tax increases very slowly in proportion to total population, whereas school attendance, not having reached one-fourth of the maximum figures possible, is bound to increase at a faster rate than the increase of population. The Bantu community, which needs an elastic system of education grants, has been given a particularly inelastic one."

There are training centres for native teachers, and at Fort Hare, in the Eastern Province, a college that prepares students to sit for the external examinations of the University of South Africa. Experience has shown that not a few of these candidates are capable people within the limits of their circumstances, but the usefulness of it all is blurred by the uncertainty of the end.

ELAND. See article, Vol. III.

ELEPHANTS. See article, Vol. III.

ESCOMBE, HARRY (1838-1899). A statesman of Natal. He was born and educated in London, migrated to the Cape in 1859, and for a time he practised as an attorney in Natal. He entered politics to become a member of the Legislative Council in 1872. As chairman of the Natal Harbour Board, appointed in 1880, he did much to develop the harbour facilities of Durban. In 1893 he was made Attorney-General in the Natal Government, and in February, 1897, he became Prime Minister, only to lose his office in October when he was unexpectedly defeated at a General Election.

FARRAR, SIR GEORGE HERBERT, Bart., D.S.O. (1869-1914). Born at Bedford, England. He commenced his business career with a prominent firm of agricultural engineers, the directors of which were relatives of his. He went to South Africa as their representative, and later became interested in the mining industry, eventually joining the

directorates of various successful properties including the East Rand Proprietary Mines and the New Kleinfontein Mines. He was one of the four members of the Reform Committee sentenced to death after the Jameson Raid in 1896. He served in the Boer War of 1899-1902 as Major on the Colonial Division Staff. He volunteered for service in south-west Africa under General Botha in 1914, and was killed in a railway accident near Aus.

FEETHAM, RICHARD (born 1874). Judge President of the Natal Provincial Division of the Supreme Court. Educated at Marlborough and Oxford; called to the Bar, Inner Temple, 1899. He emigrated to the Transvaal in 1902 and became Deputy Town Clerk of Johannesburg; from 1903 to 1905 was Town Clerk, resigning to practise at the Bar. He was Advocate of the Transvaal Supreme Court and member of the Legislative Council from 1907 to 1910, as well as legal advisor to the High Commissioner for South Africa. He held commissioned rank in the Cape Corps, 1916 to 1919; was appointed King's Counsel, Transvaal, 1919, and made Judge of the Supreme Court for the Transvaal Provincial Division in 1923 until 1930. He sat as representative for Parktown in the Legislative Assembly from 1915 to 1923. In 1924 he was appointed Chairman of the Irish Boundary Commission to delineate the boundary between Ulster and the Irish Free State.

FITZPATRICK, SIR PERCY JAMES (1862-1931). Statesman. Fitzpatrick went to the Transvaal in 1884, and two years later was elected as representative of Barberton in the Transvaal Parliament. He became closely associated with Jameson and was secretary of the Reform Committee in 1895. His activities at the time of the Jameson Raid resulted in President Kruger fining him £2000. During the Boer War he served with distinction in the Imperial Light Horse. After the war, he became a leader of the Progressive Party in the Transvaal and strongly opposed the exploitation of Chinese labour. He was one of the representatives of the Transvaal at the National Convention.

FLAG, SOUTH AFRICAN. See FLAGS, Vol. III.

FRERE, SIR BARTLE (1815-1884). Appointed High Commissioner of South Africa in March, 1877, after a long and honourable career in India. On proceeding to take up his post as High Commissioner he had express instructions from the Secretary of State for the Colonies to encourage the creation of the Confederation of the South African States. He was, however, confronted with serious native risings, and in 1879 engaged in war with the Zulus. He

considered it necessary to crush their military power, and he sent his troops forward to Zululand, where they met with a severe defeat at Isandhlwana. The British Government censured him, and he was recalled in 1880.

GEOLOGY. In the Union of South Africa, which includes the mandated territory of South-West Africa, the geology of the country is ever visible. It is a naked land, the rocky bones of the continent protrude through the scanty flesh of the soil, and are seldom clothed in vegetation or camouflaged by the work of man. It is also a country of vast spaces and unrivalled visibility.

Standing on any eminence, or even on the ground in any of the open plains, one can not only examine the rocks beneath one's feet, but can follow the characteristic features of each geological formation in the area until it sinks below the horizon.

Apart from the incidence of vegetation, which may vary from an almost complete absence to a dense covering of tuft grass and scrub forest, and excepting the mountains of the great escarpment, there are three main types of landscape in the Union, and these indicate three great geological divisions.

These divisions are as follows—

1. A basement of ancient granites and gneisses, containing as included masses, often several miles in length, bedded rocks of sedimentary origin and archæan age. These granites give rise to smooth plains with sharp gravel surfaces, diversified by occasional pointed "island hills," and high

ridges, which are formed by the bedded rocks, and with more occasional groups of tors of bare granite.

2. Unfossiliferous, and mostly richly inclined, sedimentary formations, consisting of strongly metamorphosed shales, quartzites, and conglomerates, with intrusive and interbedded volcanic rocks. These rocks have been divided and classified from below upwards as follows—

(a) Witwatersrand system—thickness	32,000 ft
(b) Ventersdorp " "	5,000 ft
(c) Swaziland " "	33,000 ft
(d) Pongola " "	36,000 ft
(e) Transvaal-Nama " "	18,000 ft
(f) Waterberg " "	18,000 ft
	<hr/> 142,000 ft

These systems are all unconformable, and the unconformabilities appear to represent enormous lapses in time. There are also minor, but large, gaps between the subdivisions of each series. No fossils of any sort have yet been discovered in these rocks, and their age, and co-ordination with systems in other parts of the world, are not yet established. The systems give rise to landscapes of long ranges of hills, precipitous, on the one flank, and sloping with the dip of the rocks on the other, separated by open valleys a few hundred feet in depth. An exception must be made, however, of the Waterberg System, the low angle of dip of which often gives rise to a landscape of table-topped mountains and nipple-crested hills.



THE VALLEY OF A THOUSAND HILLS, NATAL

Photo: Cherry Kearton



ROCK OUTCROP ON THE ROAD TO THE GOLDEN GATE, BETHLEHEM, ORANGE FREE STATE
Photo: South African Railways



BASUTO KRAAL, NORTHERN TRANSVAAL
 Note the "Zariba" or thorn fence.
Photo: Braunholtz



SAND DUNES, NEAR FISH-MORK
Photo: Braunholtz

In the Cape Province, rocks, known as the Cape Series, estimated at 10,000 ft. in thickness, overlies the Waterberg System. In these rocks have been found the earliest



SPANDAU KOP, GRAAFF REINET

The curious shape, common in South Africa, is due to the protective covering of dolerite at the summit, which makes erosion unequal.

Photo South African Railways

fossils yet discovered, and the age can be definitely fixed as Devonian. The physical features of the area covered by this series resemble those of the Waterberg system.

3. **The Karroo.** Between this system and those underlying it there is an enormous unconformability. The base of the Karroo System is always marked by glacial conglomerates and tillites which are known as the Dwyka series, and these mark an entire change in the character of the rocks and landscapes. The rocks below the Dwyka are almost invariably highly inclined and completely metamorphosed, while those above are approximately horizontal and show no signs of general or intensive metamorphism. The thickness of this glacial series is 2000 ft. The coal measures of the Transvaal and Natal lie on the Dwyka series at the base of the Karroo System.

The total thickness of the Karroo Series is upwards of 29,000 ft., made up of shales and sandstones, inter-laminated with intrusive sheets of dolerite and capped by an enormous deposit of igneous and volcanic rocks. By far the larger part of the plateau of South Africa lies on the Karroo rocks, and the physical features derived from the formation are well-known: flat open expanses, dotted with table-topped hills and pointed "spitzkops." These hills owe their shape to the protective covering of dolerite

sills that form their summits. As the dolerite gradually weathers away around the edges, the table-top decreases until at last only a "spitzkop" remains. The Karroo formation is fossiliferous throughout, but is peculiar in that no marine fossils have been found. It appears to have been entirely of fresh water or continental origin. The Drakensberg volcanics, which mark the top of the Karroo series, are of Triassic age, and on the plateau these are the most recent rocks known. Below the plateau, in the Cape Province, a Cretaceous system of considerable thickness exists, but neither it, nor any more recent deposits, make a feature in the country.

There is no evidence that the present land surface of South Africa has been under water since Triassic times, and even before that, until Devonian times, the fossils obtained all indicate a fresh water origin of the strata.

The present surface of the plateau of South Africa is therefore one of the oldest, if not the oldest, land surface in the world.

Volcanic activity appears to have been quiescent since the enormous outpourings of lava at the end of the Karroo period.



SKILDEGAT CAVE, FISH-HOER, NEAR CAPETOWN

Photo Braunholtz

There are no volcanoes that have poured forth lava on the present surface of the country, though certain phenomena, such as the Pretoria Saltpan, and the many

diamond pipes on the plateau, show that volcanic activity, taking the unusual form of "explosion craters," did exist at some post-Karoo period, but probably long before the human epoch.

A geological system exactly similar to that of the Karroo is known in India, Australia, and South America, and the existence in the Triassic age of a long-vanished Continent, posthumously named "Gondwanaland," has been suggested as an explanation of this.

Another interesting hypothesis concerns the curious similarity between the geological structure of the East coast of South America and the West coast of Africa. Placed together, the geological maps of these areas, show an amazing continuity of structure from one continent to the other, and it has been seriously suggested that they were once contiguous, but that, by a creeping movement in the crust of the earth, South America has drifted westward.

GERMISTON. A city of the Transvaal on the Witwatersrand near Johannesburg. There are several industries which supply local needs and gold refineries which handle the product of local mines. Population in 1936: white, 32,573; total all races, 79,427. GNU. See article, Vol. III.

GOLD MINING AND OTHER INDUSTRIES. The title of this article expresses quite simply the place that the gold mining industry fills in the economic life of South Africa. It dominates other industries by reason of its magnitude and wealth, and its fortunes dictate the well-being of a great mass of people, both black and white. On its continuing prosperity the State relies for a large share of its national and railway revenues, and with its progress the welfare of most other industries is intimately linked. Its direct contribution to the National economy is unequalled. It employs an army of 350,000 which is still increasing, and it distributes every year in salaries, wages, and purchases of various kinds a sum of about £45,000,000, all but a small fraction of which is spent in South Africa.

The centre of the gold mining industry is Johannesburg, which came into existence in 1886 when the barren plateau of the Witwatersrand (Ridge of White Waters), 5000 ft. above sea-level and 500 miles from the nearest port, was found to contain the most wonderful gold deposits the world has ever known. Gold had been found in other parts of the country before that—notably in the eastern Transvaal, where it is still being won—but the vast extent of the Witwatersrand and its matchless consistency represented a discovery which swiftly changed the course of South Africa's eco-

nomic history and, in time, transformed its political history as well.

When Johannesburg celebrated its golden jubilee in 1936 it had grown into a great, progressive, sky-scraping city of half a million inhabitants, all dependent in greater or less degree on the gold mines; and stretching east and west of Johannesburg, following the line of the golden reef, was a chain of satellite towns containing three-quarters of a million people, and equally based on the unique deposits being worked a mile and even a mile and a half beneath the surface.

In their first fifty years of development the mines of the Rand have yielded the enormous total of 300,000,000 ozs. of gold. Expressed in pounds sterling at the present price of gold (over £7 an ounce), that means that the value of the gold already won from the Rand exceeds £2,000,000,000. If the calculation is made at the old standard price (85s. an ounce), the Rand's output so far has reached £1,275,000,000.

One other figure deserves to be quoted, because it gives a clue to the peculiar nature of the gold deposits, and that is the quantity of rock that has had to be blasted and hoisted from the bowels of the earth and then crushed by massive stamp batteries and treated with chemical ingenuity to extract the last particle of gold from the ore. The number of tons of rock so handled during the fifty years was 900,000,000.

It will be seen that on an average no more than one-third of an ounce of gold has been recovered from every ton of ore crushed—no more than 28s. 4d. worth at the standard price of the metal. This microscopic percentage emphasizes the special characteristics of the Witwatersrand deposits. There are no nuggets on the Rand, no rich pockets set amid surrounding sterility. The gold is a mere streak, generally invisible to the human eye, and it is found in a conglomerate that goes by the local name of "banket." But its consistency is amazing. At 7000 ft or 8000 ft. the reef yields as much gold as it does at 3000 ft. or 4000 ft. Thanks to this uniformity the mining companies are able to arrange their operations with the unromantic regularity of a mass-production factory. The proven field occupies a strip of country from 2 to 7 miles wide, over which an almost unbroken chain of mines stretches for upwards of 60 miles; and lately, discoveries of the first magnitude have been made on the western side far beyond the hitherto accepted limits of the Rand, which open up a vista of future production never before contemplated.

But, as has been indicated, the Rand, for all its comprehensive richness, is essentially a low-grade field. At the old standard

price of the metal there were vast reserves of gold-bearing ground—millions of tons—which it simply did not pay to exploit, for the reason that it would have cost more to recover the gold than the gold won would have realized. But when gold rose rapidly, in terms of South African currency, from 85s. to 140s. (and higher) an ounce, and working costs remained virtually unchanged, these unpromising areas could be worked at a profit. Also the more costly operation of recovering the gold lying at greater depth could be undertaken with increased confidence. That is why, since 1933, the Rand mining industry has been enjoying a new birth. Instead of the certainty of a descending scale of production within a measurable



WASHING WOOL.

This operation frees it from grease.

Photo: Trade Commissioner for South Africa

space of time, the output has begun to rise phenomenally—over 11,000,000 oz. of gold worth £78,000,000 were recovered in 1936—and, unless the unexpected happens, and the metal suddenly loses its value, the probability is that this gigantic production will increase by at least 50 per cent before 1946. Whether this expectation will be realized depends on three main contingencies: (1) on the price of gold being maintained at its present high level; (2) on the ability of the industry to keep working costs down to their present level; and (3) on the supply of native labour proving equal to the demand.

So far, the gold-mines have been blessed with a plentiful supply of native labour on which they depend for profitable working. Black mine-workers outnumber white mine-workers by eight to one, Europeans being employed mainly in the position of overseers or on jobs requiring a high degree of technical skill, for which the natives are unfitted and from which they are, in fact, expressly barred. The strength of the native labour force has grown phenomenally in these years of expansion. From 200,000 at the end of 1932 it has risen to 300,000 at

the end of 1936, and at least another 100,000 will be needed to carry out the full programme of development that is now in hand.

There is one feature of the organization of the gold mining industry which is unique. Each mine is worked as an individual enterprise, under the control of a separate company, but almost without exception the companies are linked together in six or seven great groups which are thus able to place at the disposal of individual mines a wealth of technical and administrative experience as well as of financial strength, which would otherwise be unavailable. Incidentally the capital invested in the industry exceeds £60,000,000.

The State is a direct partner in the gold mining industry by reason of a system of leasing mining areas to new companies and sharing in the profits, but it takes no part in the actual management. Another feature of the Rand which distinguishes it from famous goldfields in other parts of the world is that the deposits are unsuited to exploitation by individuals. It is not unusual for a million and a half sterling to be spent on shaft sinking and other works before a single ounce of gold can be extracted from a mine. Great corporations commanding capital resources, therefore, become indispensable.

This governing fact has distinguished the history of the Rand from the history of the diamond fields. There, at any rate in the early days, individual enterprise, initiative, and determination had full play. In fact it was the fortunes made at Kimberley in the decade preceding the discovery of the Witwatersrand which furnished the gold mines with the means for their earliest exploitation. But profound changes have come upon the diamond mining industry since then. South Africa is no longer in the happy position of having virtually a world monopoly in diamonds. Discoveries elsewhere have challenged her dominance, and the discovery of rich alluvial fields in other parts of the Union has at the same time reacted sadly on the position of the famous Kimberley mines, and on the great Premier Mine near Pretoria.

While gold has an automatic market and an automatic price, diamonds are essentially a luxury trade. Diamond mining, therefore, can only prosper in a prospering world. As the mines of South Africa alone are capable of meeting the world's demands for diamonds, it has been found essential to have, instead of internecine competition, an equitable arrangement whereby the mines agree to a joint production sufficient to meet the needs of the hour. Only in this way can prices be safeguarded. During the years of



GOLD MINING

1. Gold mine, showing the cyanide tanks in the foreground. In 1936 11,000,000 oz. of gold worth £78,000,000 were taken from South African mines.
2. Winding gear over shaft on Witwatersrand gold mine. The deepest workings are now a mile and a half below the surface.
3. Drill at the rock face. This corridor is 2000 ft. below the surface.
4. Mining dumps outside Johannesburg. It is estimated that during the last fifty years 900,000,000 tons of rock have been treated for the extraction of gold.

Photos. South African Railways; Topical

depression from 1930 onwards, when the world demand for diamonds slumped, the diamond mines of South Africa were closed down, and at the end of 1936 only one had resumed production. Thanks to the increase in world prosperity in the early part of 1937, the outlook for the diamond industry sensibly brightened. It is believed that the reserves of diamonds remaining in South African mines are sufficient to maintain production for a hundred years yet, and in addition there are vast stores still to be recovered from the alluvial diggings. Since the first diamond discoveries in 1870, the value of South Africa's output of diamonds has reached £330,000,000.

The diamond industry is controlled by the famous De Beers Corporation, founded by Cecil Rhodes, but the State has become an active partner in production since the establishment of the State Alluvial Diggings in Namaqualand, and both parties co-operate in the essential task of controlling supplies and regulating prices.

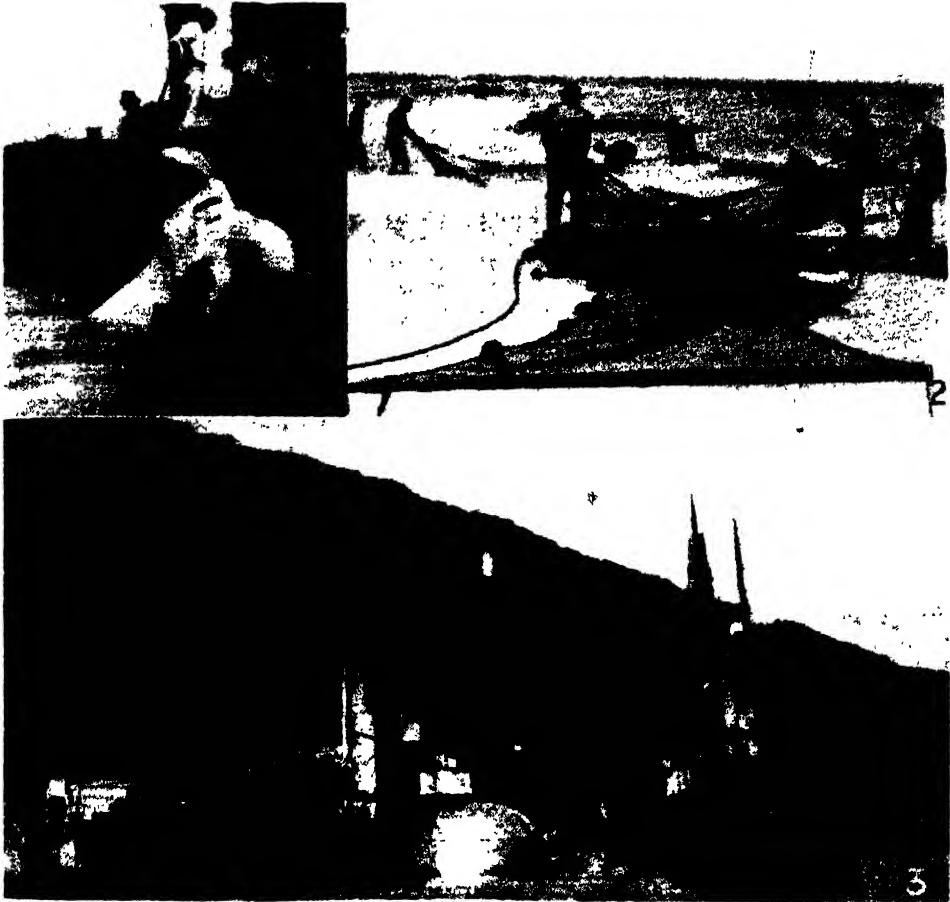
Coal mining, in which native labour is also largely employed, has undergone intensive development in recent times. The main coalfields lie in the Transvaal, and it is estimated that the total coal resources of the country are in the region of 225,000,000,000 tons. A large percentage of this tonnage is, however, in respect of coal which, judged by accepted standards, is of inferior quality. An effort has been made to develop an export trade with Asia, and there is a growing demand for bunker coal, but in the main the industry relies on the home market and on the growth of other industries for its development. In 1915 the total output of coal was 8,000,000 tons, and in 1936 it had reached 15,000,000 tons. This increased production is mainly attributable to the greater demands of the gold mining industry and to the remarkable growth of the electrical power supply industry. Almost every small town and village in the Union enjoys the use of electricity; and while many of these still depend on

small isolated plants, there is a strong tendency to discard such plants and connect up with the large systems operated by the Electricity Supply Commission and the Victoria Falls and Transvaal Power Company. Nearly all the towns situated within economic reach of these two main systems have taken advantage of the cheap supply of electricity thus made available, and this in itself has encouraged industrial expansion.

Perhaps the most significant feature of South Africa's industrial history in recent years has been the establishment of a large-scale iron and steel industry manufacturing from local raw materials. The mining industry, in particular the gold mining industry, furnishes a large and concentrated market for steel products of all kinds, and thus provides ample justification for the development of an iron and steel industry on a considerable scale. The works, familiarly known as Iscor (a name which summarizes the South African Iron and Steel Industrial Corporation) are located at Pretoria, and therefore are convenient to the centre of demand and consumption, which is Johannesburg. Over £5,000,000 was spent in founding the industry, which came into full operation in 1935. From its earliest days the industry has proved a success, technically and financially, and so great has been the demand for steel products that important extensions of the original plant have had to be undertaken. The greater part of the ore used is drawn from extensive haematite deposits in the Rustenburg district, 150 miles from the blast furnace, and coal, dolomite, limestone, manganese, and other raw materials are readily available. The geographical position of the works - 500 miles from the nearest port and virtually next door to the centre of consumption - shelters South African steel from overseas competition, and an agreement made in 1930 with the International Steel Cartel ensures for this important infant industry a share of the home market up to the full capacity of its production.



WHALE TRANSPORT IN NATAL
Photo: South African Railways



FISHING INDUSTRY

1. Manta or Eagle ray, weighing 1½ tons, caught in nets off Durban. Such catches as this are not welcomed. 2. Trek sein netting, which is dragged by hand over the sea-bed. 3. Whalers arriving at Durban with their catch. Fluctuation in supply and demand have caused uncertainty in the industry in recent years, but it has great potential value.

Photos: South African Railways; South African Trade Commissioner

Copper, platinum, manganese, chrome, and other minerals are exploited, but on a smaller scale, though increasing attention is now being paid to this aspect of the country's wealth, which in the aggregate is held to outrival even the golden Rand itself.

Notably since the World War manufacturing industry has made strides in the Union. All round there has been a conscious development of secondary industries. Active Government support for this expansion has been forthcoming in the shape of protective duties and similar fiscal expedients. The value of manufacturing production, by private undertakings, has risen from £17,000,000 in 1910—at the time of Union—to over £100,000,000 in 1936. The number of Europeans engaged has risen in the same

quarter of a century from 20,000 to 90,000, and native and coloured employees now number 120,000. It will be seen that the proportion of European labour to native labour is very much greater in the factories than it is in the mines. This is in accordance with the policy of giving the maximum encouragement to industries providing the poorer sections of the white people with occupations alternative to agriculture and mining.

The engineering industry has developed rapidly, under the impulse of mining activity particularly, and the value of its production has risen to approximately £20,000,000 yearly, with every indication of further substantial increase. Apart from the Pretoria works already mentioned, Vereeniging

is an important centre of this industry, but on the Rand there is a wide range of establishments of lesser importance judged by overseas standards. The railway workshops in the Transvaal and at the Cape are important establishments, but they are run under the auspices of the State and lie outside the ordinary field of industrial production. Industries engaged in food products—butter, cheese, condensed milk, tinned fruit, beers, wines, bacon curing, and, of course, sugar—are developing strongly. The sugar industry is centred in Natal, and its production is in the neighbourhood of 4,000,000 short tons a year. At first the labour employed in the sugar industry was almost exclusively Indian, imported from overseas, but now the majority of the workers on the estates and in the mills are natives. The number of Europeans engaged in the factories is about 1250, and the number of other workers is approximately 7500.

The building industry has thrived as a result of the general prosperity induced by the success of the gold-mines, and quarrying and cement manufacture are employing increasing numbers. Printing is an important industry, and the largest single establishment in the country is the Government Printing Works at Pretoria. Bootmaking is practised mainly in the Eastern Province of the Cape, and there are clothing and textile factories in the Transvaal and elsewhere. There is no automobile construction in the Union, but there are assembly factories at Port Elizabeth which supply a large share of South Africa's remarkable demands for motor vehicles. The production of soap, matches, explosives, chemicals, fertilizers, and the like also engage attention, and tobacco and cigarette manufacture for local consumption is a long-standing industry. One of the most interesting of the new ventures is a plant for the production of motor spirit from torbanite deposits in the Transvaal, which is yielding good results. Generally speaking, however, it is true to say that apart from mining, agriculture, iron and steel, and sugar production, the industries of South Africa are notable more for their diversity than for their individual importance.

GOOD HOPE, CAPE OF. See article, Vol. III.

GOODMAN, ROBERT GWELO (born 1871). Goodman has an established reputation as an artist. He started his art studies in Paris, where he obtained a gold medal for drawing. He was afterwards a regular exhibitor at the Royal Academy, the Paris Salon, etc. Examples of his work in oil, water colour, and pastel have been purchased by numerous public galleries, includ-

ing those of Capetown, Johannesburg, and Durban, and various cities in England and Canada. He has also done much good work as an etcher.

GOVERNOR-GENERAL. See article, Vol. IV.

GOVERNORS-GENERAL. The office of Governor-General was created when the Union of South Africa was established in 1910, the late Viscount Gladstone being appointed the first occupant. He served until the outbreak of the World War in 1914, a difficult period of readjustment for which he was well fitted by inherited qualities and political experience. The fourth and youngest son of the famous Liberal leader, he entered the Imperial Parliament as member for West Leeds in 1880, was Chief Liberal Whip from 1899 till 1906, and Home Secretary from that date till 1910.

He was succeeded by Viscount Buxton, who was created an earl on his retirement in 1920. Lord Buxton's term of office covered the whole of the critical period of the World War. He has been a member of the Imperial Parliament since 1883, and had held office as Under-Secretary for the Colonies in 1892-95. Following his retirement he wrote a life of General Botha. He died in 1934.

H.R.H. Prince Arthur of Connaught was appointed Governor-General in 1920, and remained in office until 1923. He inspired a degree of popularity, both personal and as a member of the Royal House, which materially contributed to the strengthening of Imperial ideals in South Africa.

Prince Arthur's service in this respect was maintained and strengthened by his successor, the Earl of Athlone, brother of H.M. Queen Mary, who held office with brilliant success from 1923 till 1931.

In January, 1931, the Earl of Clarendon was appointed Governor-General. He brought to the office an attractive personality and a generous experience of public affairs such as were urgently needed to face the storm of the economic depression, and the problems arising from it, during the first few years of his régime. The political reconciliation of General Hertzog



EARL OF BUXTON
Photo: Topical

and General Smuts, and the fusion of the South African and National Parties in 1933, was another event of vital importance in South Africa's history. Lord Clarendon had served as Parliamentary Under-Secretary for Dominion Affairs in 1925-26; Chief Conservative Whip, House of Lords, 1922-25; and Chairman of the British Broadcasting Corporation, 1927-30.

Lord Clarendon's successor in the Governor-Generalship of South Africa, when he retired in March, 1937, was Sir Patrick Duncan, who was the first of South Africa's public men to be appointed to this office. Born in Scotland in 1870, he left Balliol College, Oxford, to qualify as a barrister and entered the Inland Revenue Service in 1894, where he acted as private secretary to Lord Milner, whom he accompanied to South Africa to assist in the work of reconstruction after the Boer War. He was appointed Treasurer of the Transvaal in 1901, and Colonial Secretary in 1903-7, performing the duties of Acting Lieutenant-Governor in 1906. In 1910 he entered the Union Parliament and held the offices of Minister of the Interior, Health and Education (1921-24), and Minister of Mines (1933).

GREY, SIR GEORGE (1812-1898). Governor-General of Cape Colony from 1854 to 1861. Before being appointed to the Cape, he distinguished himself by sound administration in South Australia and New Zealand. He quickly gained the confidence of the natives, and the Basutos chose him as arbiter of their quarrels. In 1858 he advocated the confederation of the South African states to form one nation, and in the following year he nearly brought about the federation of the Orange Free State and Cape Colony. The British Colonial Office, however, disapproved, and Grey was recalled. He was re-instated but was told that he must let federation drop.

HALL, REV. ARTHUR VINE (born 1862). He is one of South Africa's most distinguished poets, and a retired Presbyterian minister. He was born in England, and educated at Hastings and Cambridge. After serving as a minister at Scarborough for a short time, he migrated to South Africa in 1890, and held pastorates at Cape Town and Darling. He has a long list of poems to his credit, some of the best known being "My Boer Host," "Table Mountain," "Rain-bow Houses," "Voyage to the Cape," and "Thomas Pringle." Most of his works have been collected and published in volumes under the title of *South Africa and Other Poems*. His work won high praise from Rudyard Kipling.

HARTEBEEST. See article, Vol. IV.

HAVENGA, NICOLAAS CHRISTIAN (born 1882). Minister of Finance. He served during the Boer War, and although only a youth was appointed private secretary to Hertzog. After the war he was elected as a member of the Provincial Council for Fauresmith, O.F.S. In 1910 he was appointed a member of the Executive Council. Although without previous ministerial experience, he was, in 1924, made Finance Minister. Among other things, he completely revolutionized the fiscal policy of the Union. He represented South Africa at the Imperial Conference of 1926, led the South African delegation to the Ottawa Conference, and was one of his country's representatives at the World Economic Conference.



N. C. HAVENGA
Photo: Central

HERTZOG, JAMES BARRY MUNNIK, South African statesman. See article, Vol. IV.

HIGH COMMISSIONER. See article, Vol. IV.

HOFMEYR, JAN HENDRIK (1845-1909). Known in African history as the man who controlled the Afrikaner Bond, and popularly known as "Onze Jan." In 1878 Hofmeyr formed the Farmers' Defence Association, with branches mainly in the east, and in the following year he entered the Cape Parliament as member for Stellenbosch and leader of the Dutch Party. The Bond was formed in 1882 and in the Colony, Hofmeyr linked it up with his own Farmers' Defence Association, transforming it into a purely political association, loyal to the Queen, but watchful of Dutch interests. For a time he was a close friend and ardent political supporter of Cecil Rhodes, but severed this friendship after the Jameson Raid. He was, however, a loyal subject of the Queen. He took an active part in drawing up a new constitution for South Africa, and though he was an advocate of federalism, he was one of the delegates sent to England to submit the draft Act of Union to the Imperial Government.

HOFMEYR, HON. JAN HENDRIK (born 1894). Son of Andries Brink Hofmeyr, he has been Minister of the Interior, Education, and Public Health since 1933; member of the Union House of Assembly, representing Johannesburg, since 1929. Educated, South African College and Balliol, Oxford; a

Rhodes scholar. Appointed Professor of Classics University of Witwatersrand, 1917-24; Principal, 1919-24; Administrator of the Transvaal Province, 1924-1929; Vice-Chancellor of the University of Witwatersrand, 1926-30; President of the South African Association for the Advancement of Science, 1929. His publications include a life of Jan Hendrik Hofmeyr.

HOY, SIR WILLIAM (1868-1930). Born in Scotland, he emigrated to South Africa to join the Cape Government Railways at the age of 21. He held posts at Bulawayo (1897-8), Kimberley (1898), and Port Elizabeth (1899), and was made Traffic Manager at Bloemfontein during the Boer War. In 1902 he was promoted to a similar post at Johannesburg. From 1910 to 1927 he was general manager of the Railways and Harbours of South Africa, and in 1928 became chairman of the Rhodesian Railway Commission. During the World War he was Director of Military Railways and held the rank of Colonel.

IMPALA. See article, Vol. IV.

JAMESON, SIR LEANDER STARR. Of Jameson Raid fame. See article, Vol. V.

JANSEN, ERNEST GEORGE (born 1881). Speaker of the Union Parliament. Jansen was intended for a scholastic career, but studied for the Bar and took up politics. During the World War he was an adherent of the Nationalist cause and was a member of the delegation that in 1919 visited Europe to demand the secession of the two old Boer republics from the British Empire. At the 1921 election he was the only supporter of Hertzog to be returned by Natal to the Union Assembly. He became Speaker in 1924, at the age of 43, but in 1929 he returned to controversial politics and accepted the office of Minister for Native Affairs. In 1933 he resumed the Speakership.

JOEL, JACK BARNATO (born 1862). Financier, chiefly associated with the Transvaal goldfields, director of Barnato Bros., Ltd.; Delagoa Bay Land Syndicate, Ltd.; Diamond Corporation, Ltd.; New Jagersfontein Mining and Explor-



J. B. JOEL
Photo Central

ation Co., Ltd., and many other companies.

JOHANNESBURG. See article, Vol. V.

JOUBERT, PIET (1834-1900). A Boer General. From 1880 to 1900 he was Com-

mandant-General of the South African Republic; he became Attorney-General in 1870 and Acting President in 1875. While Acting President he seized territory occupied by the Zulus and divided it up into farms, attempting to collect taxes from the Zulus. In 1883 he was a candidate for the Presidency, but was badly beaten by Kruger. Ten years later he opposed President Kruger again, and though the President was re-elected, it was popularly believed at the time that Joubert actually obtained a majority of the votes.

KAFFIRS. See article, Vol. V.

KAROO. See article, Vol. V.

KEMP, JAN CHRISTOFFEL GREYLING. Minister of Lands. During the Boer War, Kemp commanded forces against the British in the Transvaal and won the battle of Nootgedacht. He was one of the six generals who refused to sign the peace treaty. In 1912 he accepted a staff appointment with the South African Defence Force, but resigned and joined de Wet and Beyers in the 1914-15 rebellion. Kemp took his commando across the Kalahari desert and joined forces with the Germans in South-West Africa. Later, however, he surrendered to the Union forces and was convicted of high treason. He was fined £1000 and sentenced to seven years' imprisonment, but was released in the amnesty of 1916. In 1920 he entered Parliament as representative of Wolmaranstad as a Nationalist, and he became Minister of Agriculture in the Hertzog Government of 1924. He has been a member of every Government since.

KIMBERLEY. See article, Vol. V.

KING, DICK. He was the hero of a famous ride. When Captain T. C. Smith was besieged with 360 men at the Berea Hills near Durban in 1842, King and a Zulu volunteer to break through the enemy lines and bring relief from Grahamstown. During the first part of the journey they had to hide by day and travel by night. They had to travel through the bush and through territory inhabited by hostile natives and wild beasts. Yet in spite of these difficulties they travelled 600 miles in 9 days, with only one change of horses. A relief force was dispatched at once and Captain Smith's troops were relieved.

KOK, ADAM (died 1835). Celebrated chief of the Griquas. Originally a cook, he escaped from the Dutch service to become a chieftain, and won recognition from both the Dutch and British authorities. He sold the whole of his land rights to the Orange Free State, and he and his people moved to new territory below the Drakensburg and south of Natal. Emigrant farmers, however, resented paying him a land tax.



TYPICAL SCENERY IN NATAL

Photos: South African Railways; Cherry Kearton

and refused to acknowledge him as anything but a Griquan chief. He was, therefore, notified that while there would be no interference with his government of the Griquas, the white people would be under the direct rule of England.

KOODOO. See article, Vol. V.

KOTZE, SIR JOHN GILBERT (born 1849). Former Judge of the Appellate Division of the Union (1922-27). Educated at South African College in London, he was called to the bar, Inner Temple, 1874. He practised at the Supreme Court, Cape Town, and was made Chief Justice of the Transvaal at the age of 28, in 1877. In 1881 he became Chief Justice of the South African Republic, relinquishing this office in 1898, following a dispute with the President. He was appointed a King's Counsel of the English Bar in 1902, and knighted for his war services in 1917. In 1920 he was appointed Judge President of the Cape of Good Hope Provincial Division of the Supreme Court.

KOTZE, SIR ROBERT NELSON (born 1870). Educated at South African College and at the Royal School of Mines, Clausthal, Germany, obtaining diplomas in mining and metallurgy. On his return to South Africa in 1895, he joined the staff of the Transvaal Goldfields, Ltd., later to become consulting engineer. He was made Government Mining Engineer, Transvaal (1908-10); and of the Union (1910-26); from 1922 to 1925 was Vice-Chancellor of the University of Witwatersrand. Member of Parliament for Springs, and of the Board of Control of the South African Institute of Medical Research. Director of De Beers Consolidated Mines, Ltd., and other companies.

KRAUSE, HON. FREDERICK EDWARD FRAGOTT (born 1868). Judge President of the Orange Free State Provincial Division of the Supreme Court of South Africa since 1933. He was educated at Bloemfontein, Stellenbosch, Amsterdam, and Cambridge; called to the Bar in 1893. Under the South African Republic he was Acting Attorney-General and during the Boer War was Military Commandant of the Witwatersrand. He surrendered Johannesburg to Lord Roberts in 1900. He has been chairman of many important commissions, including the Mining Regulations Commission of 1907-99. In 1922-23 he was made Judge of the Transvaal Provincial Division of the Supreme Court.

KRUGER, PAUL. President of the South African Republic. See article, Vol. V.

LADYSMITH. See article, Vol. V.

LANGUAGE. The "native" languages found by the Dutch colonists who settled at the Cape in the middle of the seventeenth century—those of the Bushmen and the

Hottentots—have died out almost entirely. But the languages of the Bantu, who entered what is now the Union of South Africa from the north about the same time as the white men pushed their way up from the south, are vigorous and full of growth. They are melodious—names like *Amanzimtoti*, "Sweet Water," are typical—and structurally of great interest to the philologist. Although they do not as yet possess much in the way of written literature, their oral tradition is valuable, and they possess a good many works in translation. There are four main divisions: Zulu, Sotho, Xosa, and Tswana differentiated from each other, but all falling under the Bantu group. Zulu is closely related to Sotho and Xosa (in the south-eastern part of the Union) to Tswana. There is an increasing tendency on the part of the white people, Afrikaans as well as English, to study the "native" languages.

Official Languages. (a) *English.* The two languages officially recognized by the Act of Union in 1910 as the corner-stone of white co-operation are English and Afrikaans. The people whose home language is Afrikaans show a preponderance over those whose home language is English.

English received a permanent home in South Africa with the British occupation in 1806, and for a long time, as the Dutch of Holland was passing through the transition stage to Afrikaans, English was regarded as the only medium of culture. Behind it was the prestige of a world-language, and English people in South Africa have always preserved a very direct connection with the cultural heritage of England. This is more particularly true of the people on the Rand, who often are more at home in London than in the parts of South Africa that lie outside Johannesburg.

Nevertheless, the Englishman can generally detect a colonial accent in the English-speaking South African—an accent that verges towards Cockney, though not so much as Australian English does. South African English tends to have a glottal stop—a man will order "an egg," sharply separating the article from the noun, whereas in England they would to some extent flow together. This gives a jerkiness to the language that the Englishman notes as something foreign.

The English of the Afrikaans people is strongly tinged with Scottish. It has been said of a certain Superintendent of Education that he had not quite killed our education, but he had Scotch it! The strong contingent of Scottish Presbyterians who joined the ranks of the Dutch Reformed Church in the nineteenth century, and filled the Principalships of Schools, had a marked influence on

the pronunciation of the older generation—an influence that is now disappearing.

(b) *Afrikaans*. There has been a real growth and development of the original Dutch that was planted in South Africa when the first governor, Jan van Riebeck, came on 6th April, 1652. The Dutch trade with the East, the contact with "native" races, the new surroundings and new needs, to some extent, the climate, the immigration of the French Huguenots, of Germans, Italians, and others—all produced a remarkable change in the rhythm and the structure of the original language. The pioneering life, with its swift emergencies, caused the tendency to amputate unnecessary limbs from the leisurely speech of Holland. The famous philologist, Jespersen, praises English for shedding its inflections and adapting itself to modern conditions; that praise is earned also by Afrikaans, which developed on lines very similar to those of English.

For a long time pedants frowned on the growing language, just as English during Norman times was despised as the language of the peasant. But the language of the soil always prevails, and the pedants have now been converted. They realize, now, that a natural growth in language demands new rules and formulations, and is bound to prevail. In South Africa, though party-politicians have tried to make capital out of the language question, Afrikaans is far from being an artificially fostered hot-house plant; it has an inner life that is vivid and full of promise. It is constantly meeting new situations and solving them triumphantly, such, for example, as its handling of sports and technical terms. It is used to-day in the Universities of Holland for doctor's theses on any subject, it has been lectured on in Hamburg, Berlin, London, and Oxford. Its literature is attracting more and more attention in Europe; thus, for example, one of its novels is at the present time being translated into German, Flemish, and English. It is a racy language, full of literary possibilities, with a humorous turn of phrase that defies translation. Like the early Romance languages during their transition from Vulgar Latin, it is full of diminutives: "a great language for love-making," General Smuts once said. It represents the speech of the people rising to literary usage and refined by the contribution of European tongues.

Though Afrikaans was developing as early as the middle of the eighteenth century, it was not officially recognized in the schools until 1914, and became a Parliamentary language only in 1925. There was prejudice to overcome, both from the English community and from the older Dutch people,

before it was realized that the growth of Afrikaans was part of the normal growth of language, a thing that had happened many times in the history of cultures and is happening to-day (for example, in the Scandinavian countries and in India). Moreover, the recognition of Afrikaans has had a tonic effect on the Afrikan people, made them more precise in their mode of expression, provided an outlet for the creative literary urge that had laid dormant so long under the double ban of pedantry and politics. For not only did the English try to suppress the language of the Dutch, but the Dutch suppressed the language of the French Huguenots. Both these Acts are now recognized to be wrong and foolish, though in the latter case it should be remembered that there were only about 200 persons—men, women, and children—and that they came out under contract to the Dutch East India Company.

The translation of the Bible into Afrikaans has helped to standardize the language, which was, however, far more uniform even in remote parts than the language of Holland and Flanders. The contributions of Afrikaans, both to linguistics and to literature, once it is properly appreciated, should greatly enrich the culture of the Union of South Africa.

LAW. The history of the legal system of South Africa—not only of the Union, but of the Rhodesias as well—has been one of natural development by popular consent. No hint of racialism, of rival doctrines or the expediences of differing interests, has chequered the story of justice and its administration during nearly 300 years.

Yet the code of to-day is a junction—not so much a blending as a linking—of the systems of the two dominant races, Dutch and English.

Among the primary institutions set up by van Riebeck in 1652 to serve as the pillars of the new State he founded at the Cape was the Roman-Dutch law, then the established system in the Netherlands.

This body of legal principles, with its roots in ancient Roman practice, but modified through the centuries by the States-General and the tribunals of Holland, remains in full operation to-day only in South Africa and in a lesser degree in Ceylon, the latter also a former Dutch possession. In Holland it was superseded at the beginning of the nineteenth century by the Code Napoleon.

Not until 1828, when the judicial system of the Cape Colony was reorganized under Royal Charters of Justice, was English influence made apparent, and then more in regard to the machinery of the law than its



CENTRES OF THE LAW

The legal code is a linking of the systems of the two dominant races, Dutch and English. 1. Gov House, Pretoria. 2. High Court Buildings, Kimberley. 3. Law Courts, Bloemfontein.

Photos: South African Railways

principles. Indeed, little or nothing of the English Common Law was added to the South African system until commercial developments such as transactions in the shares of joint stock companies unknown and, therefore, unprovided for in the days when Roman-Dutch law was in course of evolution, began to create new problems.

Modern additions to South African system and practice, consequently, mainly take the shape of commercial law based on the English system.

There has also been a natural grafting of English penal law, for it is obvious that medieval conceptions of crimes and punishments on which Roman-Dutch law was shaped could not remain appropriate to the ideas of more recent civilization.

In relation to property, the Roman-Dutch law has proved adequate in South Africa from the earliest days, and there is much significance in the readiness with which British-born settlers have always accepted and continued to favour the system originally introduced by van Riebeck, widely different as it is in many respects from the English law.

Without attempting a detailed comparison of the Roman-Dutch and English systems, it is possible to point to one or two broad differences. More expressively, perhaps, than accurately, the former has been described as based on principle and the latter on precedent. The English system separates law and equity. It divides property into real and personal, whereas the Roman-Dutch distinction is between movable and immovable forms. There is a certain correspondence between reality and movables, and between personality and immovables, but they are very far from being identical. In respect of tenures, more especially of land, the Roman-Dutch law is generally regarded as better than the English system. So also is the system of registering titles to land, which South Africa has inherited from the Roman Empire, the official register providing full proof of ownership without reference to an accumulation of attesting documents.

Throughout the first century and a half of Dutch rule, the Roman-Dutch law served, subject only to the modifications of local statutes. Under the old Dutch East India Company justice was administered by the *Road van Justitie*, with minor courts sitting both at Capetown and Stellenbosch. At the beginning of the eighteenth century local proclamations were given primary consideration in these courts and, beyond these two, judges were instructed to refer to the Statutes of India, with the Roman-Dutch Code as the basic and ultimate appeal. Year

by year the system of administration grew. To the High Court were added local courts under landrosts and heemraden, while the field correls in each district exercised magisterial powers.

English rule in 1806 at first brought little change. The court of civil and criminal appeal consisted of the Governor, sitting with the Lieutenant-Governor and other high officials. Then circuit courts were established and the notable thing about them was that they introduced the English practice of sitting with open doors. A system of quit rents in place of loan tenure was one of the earliest additions to the legal system, and in 1822 some small concessions were made to meet the needs of married immigrants from England.

It was not until 1828 that changes of a more far-reaching character were instituted. English was made the legal language of the courts, punishments for crime were adapted to the spirit of English law, English procedure, and rules of evidence were introduced in criminal cases, grand and petty criminal juries were instituted and the legal age was reduced from 25 to 21. In addition, ordinances were framed for amending existing laws to conform more nearly with the spirit of English laws.

Then came a period of extension of the legal system to match the growth of South Africa politically. Natal adopted the Cape Colony system in 1845. The two Boer Republics—the Transvaal and the Orange Free State—added their own statutes to the Roman-Dutch law, but made it a strong proviso that interpretations should be to accordance with South African usage, which created a close relationship in practice to the Cape system. On this point it is possible to quote that famous Chief Justice of the Union, Lord de Villiers, who wrote in 1877—

"The decisions of the Supreme Court of this (Cape) Colony are received with as much respect in the Courts of the Republics, and, if I am not misinformed, in the Courts of Natal and Griqualand West, as the decisions of their own Courts. The greater part of our statute law is incorporated with the statute law of the neighbouring colonies and states."

By this time English commercial law had been adopted throughout South Africa, but the Republics still adhered to the criminal law of Holland.

The piecemeal creation of Cape Colony statute law had, however, resulted in a patchwork which urgently needed amendment and co-ordination. First came a Bill which brought the Cape law into close relationship with the English law of testation. Then, in 1879, the General Law Amendment Act was passed, which, among other

things, rendered less stringent the treatment of poor debtors, and introduced without modification the English law of shipping, insurance, etc. In 1892 English company law was adopted in equally complete form.

During the past half-century the work of consolidating the old, and adding new, legislation has continued. In the industrial field there has been much to do owing to the country's remarkable developments, notably in connection with mining. Changes in connection with the re-organization that

duties of the corresponding courts of the former colonies and Republics, but exercise jurisdiction in all matters in which the Government of the Union, or a person suing, or being sued on behalf of the Government is a party, or in which the validity of any provincial ordinance comes into question. In a general way it may be said that a Provincial Division has unlimited jurisdiction throughout the province. The local divisions have concurrent jurisdiction with the Provincial Divisions, but each only in regard to matters within its own district.

The Appellate Court, which sits at Bloemfontein in the Orange Free State, consists of the Chief Justice and four Judges of Appeal. It deals with both criminal and civil cases, principally the latter, and is also a Court of Appeal from the High Courts of Southern Rhodesia. In certain exceptional cases appeal is to the appropriate Provincial Division, unless the parties agree to go straight to the Appellate Division. Where before Union an appeal lay to the Privy Council, it now only lies to the Appellate Division, unless the Privy Council grants special leave, which is usually only done in civil cases where the matter at issue is of some constitutional importance.

The courts of first instance, or "lower" courts, are Magistrates' Courts and Courts of Special Justice of the Peace. The former are empowered to try both civil and criminal actions within certain limits.

The Courts of Special Justice of the Peace have no civil jurisdiction except when sitting more than 25 miles from any place where a Magistrates' Court is held, and then only in regard to claims up to £25. In criminal cases they can inflict fines up to £25, or imprisonment up to 3 months.

A special system of native courts has also been established in the Union. Natives are, of course, generally subject to the ordinary law and ordinary courts of the land, and the purpose of the special courts is to try purely native cases with a view to affording a less expensive form of procedure, and to ensure the hearing of native cases by officials familiar with native laws and customs. The following types of tribunal exist—

1. Native Chiefs' and Headmen's Courts for dealing with both criminal and civil suits punishable under or arising out of native law and custom, and between natives only.

2. Native Commissioners' Courts, to operate in districts in which there is a large native population living under tribal conditions. In criminal matters jurisdiction corresponds to that of a Magistrates' Court.

3. Native Appeal Courts, of which there are two.



DROSDY ARCH, GRAHAMSTOWN
Gateway of the old Dutch court.
Photo. South African Railways

followed the Boer War were not so revolutionary as they would have been if more widely differing legal systems had had to be unified, and even the Union of the four colonies in 1910 brought more alteration of the administrative machine than of the principles of the legal code. Yet, as stated, the work of construction and amendment goes on, and as recently as 1932 civil imprisonment for debt was abolished in the Magistrates' Courts of the Union.

At the establishment of Union, a Ministry of Justice was created, thus centralizing the authority previously exercised by the Attorneys-General of each of the colonies.

The Supreme Court, presided over by the Chief Justice, consists of an Appellate Division, Provincial Divisions and Local Divisions, including circuit courts. These "superior" courts not only perform the

4. Native Divorce Courts, also two, with areas of jurisdiction coinciding with those of the Native Appeal Courts.

5. Natal Native High Court, consisting of a Judge President and three other judges. It exercises criminal jurisdiction only, including capital offences. With a coloured population so greatly outnumbering the white, and with various other problems of a special nature, the creation of an adequate legal system, and of the machinery for its administration has been no easy task. That it has been accomplished with a large degree of success is demonstrated by the high esteem in which the law, its officers, and its impartial courts are held in South Africa by all races and classes. Further, the process of revision, amendment and consolidation is being carried on by the Union Government without interruption. One example is an amending bill dealing with the Companies Act, which has been under consideration following much careful work by the Company Law Commission. Another matter which has received close and practical attention in recent years is the reduction of law costs.

LITERATURE. The history of literature in South Africa is still a story of aspiration and endeavour rather than of clear and acknowledged achievement. Nor is this difficult to understand. As an outpost of European civilization the country began late and had to struggle against manifold odds in remote isolation merely to maintain itself. While its mingled population was not slow to develop distinctive characteristics, these have still to be co-ordinated, and there has always been, and still for some time must continue to be, the strong attractive force of the old cultural allegiances, so that even now its art is largely derivative and imitative, especially in its English writers. In its beginnings, which stretch no further back than to the mid-eighteenth century, isolation heightened the sense of kinship with and dependence on the Old World, and tardiness of communications kept it well in the rear of fashions. It was a settlement deeply immersed in the struggle for existence, with little leisure or detachment for aesthetic innovations. Hence a certain conservatism in taste, which doubtless was useful in the first stages, in that it gave a more solid foundation upon which to erect the temple of its own spirit. At the same time it is well to remember, with the discerning among South Africans, that the age of seclusion is over-past and that the nation is lost, spiritually, that seeks to live to and in itself; it must reach out to the creative and formative influences that impinge upon the artistic consciousness of to-day.

It has also to be borne in mind, to prevent misunderstanding, that though politically a Union, South Africa is not a unity. Here, as in other spheres of its life, there are the two forces, one which use and want styles English, the other Afrikaans. The former, resting upon the might and splendours of a goodly and ancient heritage, is not careful to proclaim itself, strains towards no deliberate assertiveness. The other, and the younger element, more keenly aware of its youthfulness and its still unblazoned shield, is spiritedly bent upon winning fame and honourable place for itself among the world's fellowship of great literatures. It inclines to look upon itself as the sole expression of the South African genius as yet unborn. South Africa's motto, *Ex Uniate Vires*, points the truer way.

Afrikaans (see LANGUAGE) can now make its claim to be accepted as a literary medium, and it is keen set upon building up traditions for itself. Already its rendering of the Scriptures has taken the place of the High Dutch translation in its churches and an official dictionary is being compiled. An eager corps of writers is supplying and strengthening the sinews of the tongue in all forms of literary activity, and devoted work in verse, drama, and prose writing is stimulating pride in the vernacular and fostering confidence in its powers. As yet it has little currency outside the Union, but that is no derogation from its worth, and if, as its wise champions advise, it maintains a catholic alertness to congenial external influences, it may win a notable place for itself in the world of art.

As for English South African literature, which must concern us henceforth, if it can show no supreme names to please the megalomaniac craving for "greatness," it can at least point to a respectable body of sound and worthy achievement in many fields. Nor is there need to include writers of wide repute who, though passingly associated with the country, cannot fairly claim citizenship within it; such names, that is, as Kipling, Rider Haggard and John Buchan, now Lord Tweedsmuir.

A handicap in dealing in a brief summary with the modest beginnings of the story is that its documents are often difficult to come by. Many appeared in small editions from colonial presses and have now become rarities, if not wholly lost. And much besides had fleeting existences in the columns of obscure news-sheets or magazines. Some day, perhaps, a devout researcher may track down and disinter these *primæ*, and reconstruct the narrative of the first English writers in South Africa. He could scarcely hope to light upon much real



THE SIMONSBURG, CAPE PROVINCE
Photo. South African Railways

treasure, but he could scarcely fail of matter of interest.

To exemplify these early pioneers, we might cite Stafford Cruickshank, "late of the Grenadier Guards," as he states on his first title-page. One of a numerous and hard-pressed Irish family, he had scant education, narrowly escaped going to America, evaded unpalatable drudgery by enlisting, and after service in China, came to Africa and settled in the Grahamstown district. Like his famous namesake he became an ardent temperance advocate, turning many of his verses to this theme. For all his bardic zeal—he wrote four cantos of rhymed couplets on "predestination"—he is, as might be expected, little better than facile in homely strains, showing his best in simple tales and topical satire.

Or there is, with more of culture and taste, Henry Martyn Foot, a dissenting parson from Devon who came to hold the chair of English and Philosophy at South African College. Like his academic succes-

sors, John Noble and John Clark, shrewd wit and masculine good sense brace his style which, if it does not soar, marches briskly. A lady sib to two families of note in Cape annals, Mrs. M. E. Barber (born Bowker), wrote some earnest and tuneful verse and has some pleasant prose to her credit.

But best known of these early writers is Thomas Pringle, whose quality may conveniently be taken as giving the pitch of the better sort of men of letters in the Cape. Coleridge knew and somewhat overpraised his work, but the best of it still stands and holds place in anthologies like E. H. Crouch's *Treasures of South African Poetry and Verse* and the later *Centenary Book of South African Verse* by F. Carey Slater. These may be accepted as forming the earliest introduction to a little known field. They include work by Dr. Kolbe, a singer of delicate fancy, light and flexible, and of a pleasant urbanity. Or there is Kingsley Fairbridge, the story of whose short span, published by the Oxford Press, is an arresting

record of strangely mingled adventure, physical and spiritual. His verse has fine sincerity and intensity.

The backward glance towards "home" is still manifest in the verse of the British-born. There is Charles—"Hamewith"—Murray, an Aberdonian who in varied life beneath the Southern Cross carried the rapid vernacular of his native county and an old liking for Horace. Distance enhancing retrospect evoked "Hamewith," "The Whistle," and "The Back o' Beyont" as certainly as any of his songs of life in the wilds.

In modern verse South Africa is as new-old and as old-new as any dominion beneath the flag. It can match all its vagaries of style and parody too, as does John Ross, of Kimberley, though so far mainly for his private circle.

Roy Campbell's "Broken Record," remembering his young days in Natal and his gallant-hearted father, introduces best this remarkable poet. A rebel against sleek vacuity and spinsterly primnesses in versing, he turned, after minor sallies, to the provocative boisterousness and ebullience of "The Flaming Terrapin," and when critics frowned or lectured, replied in scaring satires in Churchill's vein, with a gusto that hardly stopped to discriminate between offenders and unoffending, and striking out some unforgettable jets of merciless epigram.

So far there has been no drama of note, in spite of essays by Stephen Black, Noel Langley, and Morris Broughton. But prose has fared better. Olive Schreiner, for better or worse, is almost a classic; and everyone knows Sir Percy Fitzpatrick's *Jock of the Bush Veld*. Leonard Fleming, with his *Fool on the Veld* and its successors, makes mirth over the lighter misadventures of farming days and ways. Colonel Deney's Reitz, in *Commando and Trekking On*, reveals the fine qualities of sane Dutch manhood at their sterling best. Miss Pauline Smith's delicate talent had, as she tells, to be coaxed into utterance by Arnold Bennett's zealous friendship, but her group of finely wrought vignettes justify her and her prompter. A life overclouded by ill-health bred in her a sombreness akin to much in the themes she chose, but too many others, less truly sensitive, tend to overwork the elegiac mood, confounding it with the lugubrious, which is alien to the South African life and spirit.

Wholly self-reliant and self-controlled, Miss Sarah Gertrude Millin, in her novels, her discursive books and her biographies of Rhodes and Smuts, uses a spare tight-lipped style eloquent of the check she imposes upon her pen. It is austere discipline, effective

where it does not show signs of becoming a tiring mannerism.

Mrs. Margaret Alston's *An Old Cape Homestead* suggests a vein that should attract greater attention. It is akin to the loving intimacy that gives *The Compleat Angler*, White's *Selborne* and *Fallodon Papers* a place apart in our affections. South Africa is rich in allurements of these kinds, and so is her past, filled with the strange adventures of too little known travellers and hunters. The late Dr. J. G. Gubbins, in the great Africana collections which were the loving labour of a wonderful life, has shown the way to these romantic stores, hitherto sadly neglected.

MALAN, CHARLES WYNAND (1884-1933), Nationalist statesman. He was educated at Stellenbosch and became an attorney, entering Parliament for Humansdorp, and being re-elected at successive elections. He became organizing secretary of the Nationalist Party in the Cape Province, and when the Nationalist-Labour Government took office in 1924 under Hertzog, Malan was made Minister of Railways and Harbours.

MALAN, Rt. Hon. FRANÇOIS STEPHANUS (born 1871). One of the "elder statesmen" of the Union. Educated at Stellenbosch, Cambridge, and the Cape Universities. He was appointed advocate of the Supreme Court of Cape Colony in 1895, and in 1900 elected a member of the Legislative Assembly, representing Malmesburg. He became Minister of Agriculture in 1908, and on the formation of the Union in 1910 he was appointed Minister of Education. He continued to hold Cabinet rank until 1924, and for a time in 1918-19 was acting Prime Minister. In 1927 he was appointed Senator.

MERRIMAN, JOHN XAVIER (1841-1926). One of Africa's most distinguished statesmen. He was born in Somerset, England, and his family emigrated to South Africa when he was a child. He entered politics in 1869, when he joined the Molteno Ministry as Commissioner for Public Works, and he continued to take an active part in affairs, becoming closely associated with Rhodes. On the formation of the Rhodes administration in 1890, Merriman was appointed Treasurer-General, an office he also held in a later government under W. P. Schreiner. He was chairman of the Cape Parliamentary Committee that inquired into the Jameson Raid. In January, 1908, he succeeded Jameson as Prime Minister, also taking the office of Treasurer-General. He became head of the South African Party. On the formation of the Union in 1910, he was bitterly disappointed when Botha was chosen to be the first Prime Minister, expecting that as Prime Minister of the Cape

from 1908 to 1910, he had first claim on the chief office of the newly-formed Union. He was asked to join Botha's Government but declined, though he supported the Government.

MILLIN, SARAH GERTRUDE. Authoress. Born in the Barkly West District, C.P.; daughter of Isaiah and Olga Liebson; married Philip Millin, K.C., of the Transvaal Bar. Her publications include *An Explanation of South Africa called The South Africans* (1926), *Men on a Voyage* (1930), *Rhodes: A Life* (1933), *General Smuts* (1936); also the following novels: *The Dark River* (1920), *Middle-class* (1921), *Adam's Rest* (1922), *The Gordons* (1923), *God's Stepchildren* (1924), *Mary Glenn* (1925), *An Artist in the Family* (1927), *The Coming of the Lord* (1928), *The Fiddler* (1929), *The Sons of Mrs. Aab* (1931), and *Three Men Die* (1934). She has probably contributed more to South African literature than any other individual.

MILNER, LORD. See article, Vol. V.

MOLTENO, SIR JAMES TENNANT (born 1865). Fourth son of Sir John Charles Molteno; born at Claremont, educated at Rondebosch and Cambridge. He was called to the Bar at the Inner Temple in 1889, and upon his return to South Africa in 1890, he was elected to represent Namaqualand. He was the first Speaker of the Union Assembly, and held the office until 1918.

MOLTENO, SIR JOHN CHARLES (1814-1886). Commanded the Beaufort burghers in the Kaffir War of 1846-47, and took an active part in Cape politics, becoming leader of the Cape Parliament, and ultimately, in 1872, was the first Prime Minister of Cape Colony under "responsible government." From 1881 to 1884 he was Colonial Secretary. He took part in two famous controversies. The first was his dispute with Sir Bartle Frere over the control of forces in South Africa; and the second occurred when, at the bidding of Lord Carnarvon, he forced

the passage of a bill through the Cape Parliament, removing Langalibale and his son from Robbison Island to the mainland.

MOSSEL BAY. A small port 240 miles east of Cape Town, it is the fifth port of the Union. In 1935, 263 ships of 1,008,298 total tonnage entered it. There is an open anchorage with unlimited depth. Population 1936: white, 3255; total all races, 7220.

MURRAY, DR. ANDREW (1828-1917). Distinguished minister of the Dutch Reformed Church. Murray was a member of a well-known family that originated in Aberdeen. He was educated at the University there, graduating as M.A., and was ordained in the Reformed Church at the Hague on his twentieth birthday. While still under 21 years of age he was inducted at Bloemfontein. He took a great interest in the spiritual life of the Voortrekkers, and on several occasions crossed the Vaal to minister to them, becoming known as the first minister of the Voortrekkers. He accepted a call to Worcester in 1860 and was elected Moderator in 1862. Altogether he was six times Moderator of the Synod. In 1864 he commenced his famous ministry in Capetown.

NATAL. See article, Vol. VI.

NATURAL RESOURCES. Fauna, flora, forests, fisheries, agricultural and pastoral resources are all widely distributed in the fertile veld, mighty mountains and surrounding seas—contributing a generous share towards the natural riches of the country—but even the importance of these has been eclipsed by the enormous wealth of the prolific mineral assets.

Precious Metals. *Gold.* Gold, both alluvial and underground, exists in many and various parts of South Africa, but all other sources sink into insignificance compared with the untold quantity of the wealthy Witwatersrand. The Witwatersrand goldfield is on an elevated plateau, nearly 6000 ft above the sea.

The conglomerate beds of the Witwatersrand are composed of quartz pebbles bound



MOSSEL BAY FROM THE BREAKWATER
Photo: South African Railways

together by a siliceous cement containing iron pyrites. The name "banket" was given to the conglomerate from its general resemblance to Dutch almond sweetmeat of this name.

The gold contained in the conglomerate is not often visible to the naked eye, occurring almost invariably in the matrix, its existence in the pebbles having been recognized only in rare instances. There are several series of these conglomerate beds in planes more or less parallel to each other. The most common designation of them, starting from the lowest geological horizon, is as follows: Main Reef series, Bird Reef, Kimberley series, Elsberg and Black Reefs. See **GOLD MINING AND OTHER INDUSTRIES**.

Gold was first located at Barberton in 1882. The Barberton deposits lie in a strip of rugged country in the Eastern Transvaal.

Gold was discovered in the region of Pietersburg in 1870, and the field consists of two small areas of country situated a few miles to the east and south-east of the town of Pietersburg in the north-eastern Transvaal.

Ninety miles east of Pietersburg is situated the area known as the Murchison and Letaba goldfields, which received attention shortly after the discovery of the Pietersburg deposits.

The goldfield known as Lydenburg and Pilgrim's Rest lies in the eastern Transvaal, approximately 40 miles north of Barberton, and occupies an area of some 400 sq miles of country lying west of and on the Drakensberg escarpment.

Alluvial gold exists in the Pietersburg, Barberton, and Pilgrim's Rest Districts, though at the present time there are no diggings of any importance being worked in this manner.

Base Metals. *Copper.* Copper occurs in the Union, in the Transvaal, Cape, and Natal Provinces, the only deposits of any economic importance being those in Namaqualand and the Zoutpansberg district of the Transvaal. Copper was known to exist in Namaqualand as long ago as 1685, but was not mined systematically until 1852. At the present day the only copper production in the Union is at the Messina Mine in the Zoutpansberg district of the Transvaal, the Namaqua Companies having ceased to produce since 1931, owing to the low price of the metal.

Tin. There is evidence to show that tin was worked in the past, and that some of the tin mines of to-day are on areas that were mined fairly extensively by ancient people. The ancient tin workings of the Transvaal and surrounding country are, so far as has been ascertained, confined to

deposits and tin-bearing lodes in the granites, quartzites, and felsites, and none of the present-day alluvial tin areas had ever been worked in ancient times.

Cassiterite was discovered both in the Cape Province and in Swaziland in the final decade of the last century, but it was not till 1902 that serious attention was turned to its exploitation. In 1904, cassiterite was also found in the Bushveld area of the Transvaal.

Antimony. Antimony occurs in the gold reefs of the Murchison range in the Zoutpansberg district of the Transvaal, the reefs extending for 30 miles. The ore contains from 6 to 60 per cent antimonite and from 3 dwt. to 1 oz. of gold to the ton.

Chromium. Chromite deposits occur with almost unbroken regularity in the lower part of the Norite zone of the Bushveld Igneous Complex in the Transvaal. In character these deposits are pseudo-stratified segregations, dipping and striking conformably with the rocks of the Norite zone, in which they occur.

Chromite horizons have been traced for many miles in the Rustenburg and Lydenburg districts. The resources of chromite ores are immense. The sesquioxide content of the ores varies from 28 to 50 per cent, but on the average the percentage is round about 42 to 44.

Iron. Deposits of iron exist all over South Africa and recent surveys of the resources prove that the country is richly endowed with iron ores that compare favourably in quality and quantity with any country in the world. The total resources of the Union are, in fact, inferior only to those of India, the United States of America, Brazil, and France.

Manganese. In 1925, manganese was discovered at Postmasburg, 108 miles west of Kimberley. The deposits are on a large scale, as compared with other well established sources of supply being exploited in other parts of the world. There are two principal varieties of ore, the one massive or non-crystalline and the other crystalline, the former agreeing in composition and properties with psilomelane, and the latter principally with braunite.

Nickel. The occurrence of nickel has been noted in many parts of the Transvaal bushveld complex, in the Barberton area, in the Cape Province, and also in Natal, but the only two deposits, which appear at the present time to have prospects of economic importance, are those at Insizwa in the Cape Province and at Vlakkfontein (No. 902) in the Rustenburg District of the Transvaal. At Insizwa and Vlakkfontein, the ore occurs as pyrrhotite mixed with calcopyrite and pentlandite, and is appar-

ently formed by a magnetic concentration in the base of large norite sheets.

Platinum. The occurrence of platinum and the allied group of metals has been noted in some of the igneous rocks of the country, and in the black sands derived from the concentration of the Rand conglomerates in the process of extracting the gold. Platinum was discovered in South Africa in 1923 in a brecciated quartz lode near Naboomspruit in the Transvaal. The following year platinum-bearing rocks were located in the Bushveld Igneous Complex in the Lydenburg district of the Transvaal, and in the middle of 1925 platinum was also located near Potgietersrust, and another important source is found in the Rustenburg area, also in the Transvaal Province.

Precious and Semi-precious Stones. *Diamonds.* The diamondiferous occurrences in South Africa are spread over a large area, the chief centres being Barkly West and Kimberley, the Cape, Boshof, Koffiefontein, Jagersfontein, Kroonstad and Theunissen in the Orange Free State and the Premier Mine, near Pretoria, in the Transvaal. Altogether over 250 occurrences of "Kimberlite" or diamond-rock has been located in South Africa.

Alluvial Diamonds. Alluvial diamonds have been found over a large area below the confluence of the Vaal and Orange Rivers. Huge deposits of gravel with phenomenally rich patches of valuable stones have also been discovered at Alexander Bay immediately South of the mouth of the Orange River, extending for a distance of over 100 miles along the Cape Coast and also northwards to South-West Africa.

Garnets. Garnets of very good quality and several varieties of spinel occur in the Zoutpansberg district of the Transvaal.

Beryl. Beryls, including the emerald variety, occur in mica schists in the Leydsdorp area of the Letaba district in the Transvaal.

Verdite. A variety of serpentine, an extremely beautiful stone of green colour which has obtained the local name of verdite, has been worked in the Barberton district of the Transvaal.

Crocidolite. In South Africa this term has been commonly applied to the "Chatoyant" hard variety of this mineral used in jewellery and for ornamental purposes, and also known as "tiger's eye" and "cat's eye." The distribution of the valuable species is comparatively limited, little being

found away from the farm of Naauwpoort in the Hay District of the Cape Province.

Jade. The so-called South African "jade" is found in the Transvaal, between Pretoria and Rustenburg. It possesses all the qualities of a semi-precious stone. The commonest colour is green, not much different from that of true jade, but pink and other lighter shades are also found.

Other Minerals.

Coal. South Africa owes its economic importance chiefly to

its natural resources in gold and diamonds, but these could not have been produced without the existence of cheap coal of which there is an abundant supply. The principal coalfields are situated in the Transvaal and Natal, the Transvaal deposits being first opened up at Boksburg in 1887. Large seams were subsequently opened up in the Witbank district, which is now a well developed field in close proximity to the Witwatersrand goldfields. Coal areas exist also at Ermelo, Wakkerstroom, Vryheid, and in parts of the Orange Free State and Cape Province.

Asbestos. Five classes of asbestos occur within the Union of South Africa, namely, chrysotile, crocidolite, amosite, tremolite, and asbestos. Asbestos mining dates back to 1893, while chrysotile was first produced in 1906 and amosite in 1912. Chrysotile occurs chiefly in the Barberton and Carolina

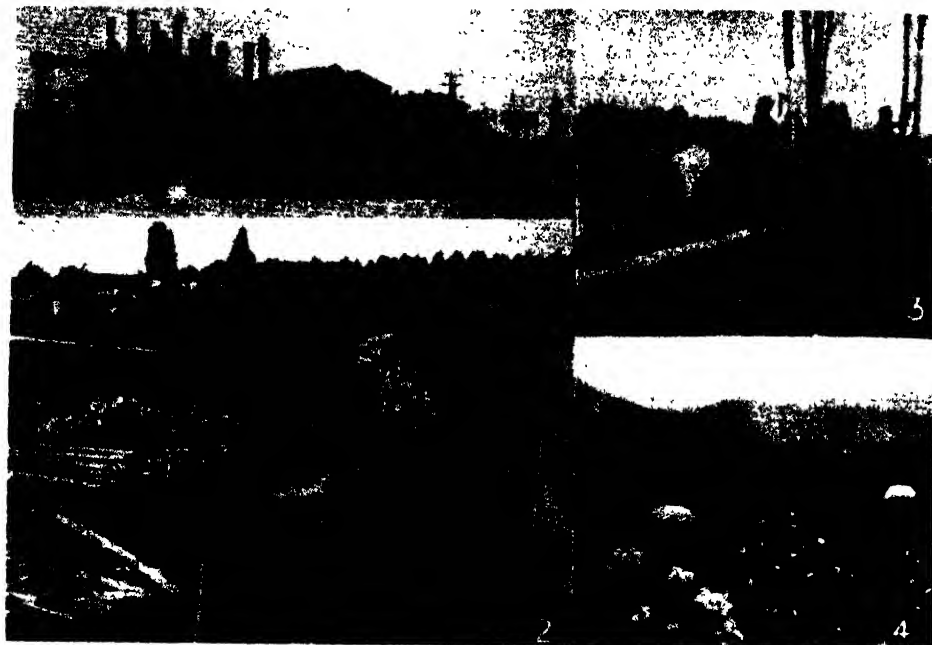


DIAMOND MINING

Top: Primitive methods used in working claims the diamond diggings.

Bottom: Concentration plant at Kimberley

Photo: South African Railways

**NATURAL RESOURCES**

1. Power station at Vereeniging. 2. Mine props in a timber siding near Duivelskloof, ready for dispatch to the gold mines. 3. Stripping wattle bark. 4. Picking cotton in Natal.

Photos: South African Railways

district of the eastern Transvaal and Swaziland. Crocidolite occurs in Griqualand West over a distance of 250 miles, and amosite over a distance of 60 miles near Pietersburg in the northern Transvaal. Occurrences of tremolite are found in Zululand and asbestic in the Zoutpansberg district of the Transvaal.

Corundum. Corundum is found in the Zoutpansberg and Barberton areas of the Transvaal.

Fluorspar. Fluorspar is found in the Zeerust district and also in Zululand.

Graphite. Common in the Transvaal and Cape Province.

Gypsum. Gypsum occurs in Griqualand West; kieselguhr in the Transvaal and Griqualand West; kaolin and clays on the

Cape Flats, lignite in the Knysna District of the Cape Province; magnesite in the Transvaal. Lime covers vast areas in the Transvaal and Cape Province, marble is found in the North Middleburg district of the Transvaal; mica in the Transvaal along the Oliphants River and oil shale in the Transvaal, Natal, and Cape Provinces.

Phosphates. Considerable quantities of phosphate deposits exist in the neighbourhood of Saldanha Bay. Talc of excellent

**COLLIERY AT ERMELO**

Coal production reached 15,000,000 tons in 1936, due to increased demand from gold mining and electrical power supply industries.

Photo: South African Railways

quality occurs in the Barberton district of the Transvaal in very large quantities and there is one notable occurrence of soda in the Pretoria district.

OPPENHEIMER, SIR ERNEST (born 1880). Emigrated to South Africa in 1902, and quickly became prominent in Kimberley and in the financing of developments. From 1912 to 1915 he was Mayor of Kimberley, and in 1921 he was knighted. In 1924 he was elected to represent Kimberley in the Legislative Assembly. He is chairman of the Anglo-American Corporation of South Africa, Ltd., and a director of the British South Africa Co.

ORANGE FREE STATE. See article, Vol. VI.

ORANGE RIVER. See article, Vol. VI.

OSTRICH. See article, Vol. VI.

PEOPLE. A few years before Columbus discovered the New World a Portuguese navigator, Bartholomew Diaz, "discovered that so many ages-unknown promontory, which they called Tormentoso or Stormy, because of a great tempest they met with there; but our King gave it the name of Cabo de Boa Esperança, from the great hope it gave of discovering the Indies."

What happened thereafter is modern history. The Dutch East India Company founded a settlement at the Cape in 1652 and Capetown remained, until the cutting of the Suez Canal, the "halfway house to the Eastern Seas."

Both Portuguese and Dutch found the southern extremity of the continent almost empty of inhabitants.

It is one of the most tenacious fallacies of South African history that when the Europeans arrived they found the native races already in occupation of the country and deprived them of almost all of it.

The Bushmen. When the first Dutch settlers came to South Africa in 1652, they found only a few Hottentot clans, yellow, cattle-owning nomads, settled in the immediate vicinity of the Cape and in the neighbouring valleys. Later, as their knowledge of the country increased, they found other such bands, scattered along the 300 miles of coast from Cape Town to the Orange River mouth, whose total number could not have exceeded 30,000. But if any race could have claimed to be the historical aborigines of the country these were the Bushmen, pygmy savages, living in sibs of seldom more than ten; fierce, untameable hunters, who lived off game and wild roots, and later off the herds of cattle which the yellow, white, and black invaders brought with them.

From the relics which the Bushmen have left all over South Africa, it is clear that at

one time they were spread over the whole of the sub-continent from the Cape to the Zambezi, but their number was never considerable. To later invaders the race presented grave problems on account of their intractability. They were considered to be on the lowest rung of civilization. Their implements were few: a digging stick, a crude knife, ostrich-egg receptacles for the storage of water, bow and arrow, tipped with bone (much later, iron). They had no domestic animals except some half-starved hunting dogs. They were greatly skilled in the preparation of poison, which they spread on their arrow-heads. Though small and stunted they could perform deeds of amazing hardness. A Bushman would often continue at a trot after the hunted animal, never permitting it to have a minute's rest or to drink during the heat of the day, until it sank down exhausted when, with a final sprint, he would overtake his quarry and dispatch it. They were an improvident race and lived just as they found things, without thought for the morrow.

Yet they are the only South African natives to have left monuments of a high artistic culture. All over southern Africa Bushmen paintings and rock engravings testify to their skill and sense of colour, composition, and movement. The striking similarity between their work and paintings found in Pyrenean caves has given rise to a theory that the Bushmen in prehistoric times came to Africa via the Straits of Gibraltar. Losing more and more of their skill, deteriorating physically as a result of their arduous struggle for existence, they were a dying race when the yellow, black, and white invaders entered South Africa from three different points of the compass three centuries ago. Ethnologically, the Bushman is related to neither the black peoples, nations of Bantu race, nor to the Hottentots, a yellow people.

The Bushmen had a strict code with regard to hunting rights. Each sib had its own defined hunting grounds and trespass on these preserves was punishable by death. The black, yellow, and white invaders not only trespassed upon these grounds, but the Bushman saw his "cattle," the game, destroyed by the superior weapons of the newcomers. It was impossible to treat with the Bushmen since by their simple code every strange hunter was a trespasser and every trespasser an outlaw. Lying in ambush behind a bush or rock, they sped their poisoned arrows at the lonely traveller or hunter. To-day the remains of this interesting race, a few hundred of almost pure breed and a couple of thousand of mixed breed, enjoy sanctuary in the enormous game

reserves of the South African Government, where they are permitted to hunt freely in return for information against poachers of other races.

The Hottentots. Very little is known about the origin of the Hottentots, who resemble the Mongolian rather more than any other race except that instead of coarse, long, straight hair, their heads are covered with short tufts of twisted woolly hair. It is thought that they crossed over to Africa from Arabia to Somaliland, bringing with them the Syrian fat-tailed sheep which to this day form the basis of South African sheep breeds.

About the fourteenth century, when they were still somewhere near the Great Lakes,



BOVENDA DANCE BAND
Photo: South African Railways

they must have been pushed southward by advancing hordes of Bantus. Being weaker than their aggressors they moved out of their way, crossing to the more inhospitable Atlantic coast, and by the sixteenth century they had reached the Cape. At stages of their migration from the Kunene to Table Bay, small sections detached themselves from the main force, and settled down, taking distinctive tribal names. When the white man landed at the Cape, the yellow invaders retired along the route they had just come.

The Hottentots are of medium stature. Their faces have the shape of an inverted triangle. Their cheek bones are prominent, their eyes restless, and their lips heavy and sensual. In youth they often have a pleasant Chinese appearance. Their colour is that of a dried tobacco leaf.

The Hottentots were further advanced in civilization than the Bushmen; they were a pastoral people when the Europeans made their acquaintance at the Cape. They trained oxen as pack and riding animals. Although they had considerable herds of cattle, their main diet consisted of milk,

game, bulbs, and the roots of wild plants. They did not till the soil, and very soon after the coming of the European settlement they had given up cattle breeding altogether, finding it more profitable and convenient to steal from their northern black neighbours and sell to their southern white neighbours. They knew the art of smelting copper and iron, and consequently had better weapons than the aborigines.

They are a very emotional race, easily pleased and easily depressed. They are fond of drinking and dancing, and while they can be exceedingly cruel when their passions are roused, they are hospitable and kindly towards their friends.

Though the black man is undoubtedly superior to the stunted yellow man in physique, and though it is easier on the whole to deal with blacks who are of a more even temperament, the Hottentot is far and away the most intelligent African south of the equator.

The political institutions of Hottentot tribes are almost as complex as those of advanced European nations. Amongst most Hottentot tribes there were ruling families, but on the death of a chief the succession did not go to the eldest son unless the Council of Elders and the tribe confirmed his election. Constitutionally the ultimate power rested with the Council, that is, with the Hottentot parliament. But, as with all democracies, a strong and popular chief always found his Hottentot democracy agreeable to do his will.

The tribes which lived nearest the white settlements were well mounted and well armed. They were good horsemen, keen marksmen, and excellent tacticians. Many Hottentots had had quite a considerable European education. Missionaries had settled amongst them from the earliest times, and one of the most amusing effects of mission schooling was the flowery style in which the chiefs wrote diplomatic insults to one another.

Correspondence was usually in Netherlands, the language of the missionaries' Bible, and the leading families among Hottentots spoke both Nama, and the Afrikaans of the South African Dutch.

By 1880 most of the Hottentots who still maintained a tribal organization had retired north of the Orange River, where, during the following two decades, they either submitted to, or were conquered by, the Germans. Their present number is about 20,000 in South-West Africa, with about the same number, though not of as pure race, within the Union itself.

The Bantu. Reference has been made to the general fallacy that South Africa was

inhabited by black nations who were deprived of their land by white invaders. Actually it was 120 years after the first white settlement at the Cape before the Xosa vanguard of the advancing Bantu race reached the Fish River, more than 300 miles from Cape Town. In 1776 the first friendly contact was made with the Xosas by the Dutch East India Company's Governor, and an agreement was arrived at that the Fish River should be the dividing line between white and black. For the best part

Cape frontier, the Government tried the policy of establishing vacant and neutral zones between the frontier of the white settlement and that of the tribal territories. Finally the Colonial government was forced to abandon this policy and to replace the vacant zone by closer settlements of ex-soldier farmers.

Meantime Chaka, the Napoleon of the Zulus, then a quite insignificant tribe, had drilled his people into regiments, imposed a discipline hitherto unknown among them,



ANAKWETA DANCE IN PROGRESS

Photo: South African Railways

of a century, however, this portion of the Cape Province and later Natal were the scene of recurring native wars. Powerful tribes were marching down the East Coast of Africa. The Zulus had almost reached their present areas. Each tribe was subject to pressure of others in its rear, each tribe naturally pressed forward—on the rear of its predecessors. Although of the same race there was constant war between the tribes. Once a tribe was dislodged from the area in which it had settled, it attempted to overwhelm other and weaker tribes in the vicinity.

Down the centre of Africa another black migration was pressing forward, reaching those areas now known as the Bechuanaland Protectorate, as late as the beginning of the last century. Between Bechuanaland and the Drakensberg mountains, however, the country was almost empty.

When the Xosas started to harry the

introduced the short stabbing spear and new tactics, and instituted the wholesale death penalty for defeat. His armies attacked and defeated every tribe within striking distance.

Once more the scattered tribes went on their migrations. Many of them were collected by the astute Moshesh in the mountains of Basutoland, and out of this hybrid collection was born one of the strongest nationalist units in Bantudom, the Basuto nation. A strong Zulu impi which had suffered defeat decided to escape execution by flying to the country between Bechuanaland and the Drakensberg. Unfortunately they found—this was in the 1830's—that the empty lands of the Orange Free State were just being entered by Boer immigrants, determined to fly from the Frontier policy of the Colonial Office (the Cape had been British since 1812). Moselikatse, the Zulu chief, attacked the Boers on several occasions, but was severely defeated, and placing

many hundreds of miles between himself and his redoubtable foes settled down near Bulawayo. He founded the Matabele nation, conquering his territory from other blacks who had lived there long before him.

So the history of South Africa gradually settled down as Europeans filled the areas round about the native territories, delimited frontiers, and established the rule

those whose services are not required by the Europeans as labourers. It provides for the setting aside of certain areas in addition to existing resources where native land holding will in future be legally recognized. European land holders in these areas are to be bought out by the natives or the Government, which as a last resort has reserved to itself the right of expropriation. There are



ZULU KRAALS

Photo: South African Railways

of law and civilization, although there was undoubted exploitation.

Present Native Policy. With the passing of the Native Representation Act in 1936, the Bantu has been politically segregated from the rest of the population. The adoption of a second law, the Native Trust and Land Act, seeks to provide for the territorial segregation of the natives and a third measure, amending the Urban Areas Act, will regulate the terms on which natives are to be admitted to live in the towns of South Africa's European area. The Land Act is a wise and overdue measure. It provides for the extension of over-populated native reserves in order to make room not only for the natives' natural increase, but also for the "redundant" native, that is,

at present 23,000,000 acres of native reserves, and these are to be increased to nearly 40,000,000 acres, or one-eighth of the total area of the Union. In dealing with these figures it must be borne in mind, however, that an enormous proportion of the Union is arid or semi-arid land, and that all the native reserves are in the most fertile parts of the Union.

Of interest in this connection are the population figures of the 1936 Census. According to these the native population of the country numbers 6,597,241, the Europeans 2,003,512, besides 767,984 "coloured people," and 219,928 Asiatics.

The "Coloured" Population. The origin of the coloured people, now a community of their own, dates back to the days of slavery



NATIVE LIFE

1. Women of the Bonvaan tribe. They colour their faces with red or white clay and wear skirts of skin and cloth turbans.
2. Mother and child: almost invariably Zulu women carry their children on their backs.
3. Amaxosa woman and child: the women of this tribe are much given to pipe smoking.
4. Native chief with his family. Polygamy is a common practice with those who can afford the cost of paying for extra wives and supporting them.
5. Young Zulu warrior with his first two wives.
6. Zulu warriors posing as if ready for battle. The shields are of hide and very tough. The warrior on the left holds a knobkerrie in reserve.

Photos: South African Railways

at the Cape. Colour "prejudice" has always been strong amongst the South African Dutch settlers, and this attitude is also characteristic of South Africans of British stock. Cut off from European contacts by poor communications, cut off, indeed, from close companionship even within the colony by enormous distances, the early Dutch settlers realized that their only hope of survival lay in a rigid maintenance of colour taboos. It is a fact that nowhere else in the world has a large settlement of native-born white men lived amongst an overwhelming majority of coloured races and yet maintained its racial purity as in South Africa.

The three-quarter million people of mixed origin do not disprove this statement. There was undoubtedly a certain amount of miscegenation between settler and slave, or settler and free native, but it was considered a disgraceful thing and its incidence was very low indeed. There was some intermixture between frontier farmers and hunters and women mainly of Hottentot stock. In the majority of cases these were not "immoral" unions. There were no white women on the frontier and marriage officers were hundreds of miles away. The frontier farmers took Hottentot wives, raised half-caste children, and tried to impress upon them all the rules and standards of white men. But the community was exclusive and not only the half-breed offspring, but also the white father, suffered ostracism. The half-breed offspring were so proud of their white origin that they deliberately called themselves Bastards, which in the South African idiom does not denote illegitimacy but mixture of blood. Everywhere along the north frontier the Bastards flocked together for mutual protection against the exclusiveness of white men and the hostility of black men. Their number is limited to a few thousand.

At the Cape, where the vast majority of the coloured people live, the Dutch East India Company had originally imported numerous slaves from the East and from Mozambique for labour in the Company's gardens and farms. The Slave Lodge in Capetown was in the docks area, and there was free access to the sailors in the Bay. These were the ancestors of the Cape coloured population. Political prisoners from India were the ancestors of the "Cape Malays," who, apart from their Moslem faith, are hardly distinguishable in feature or character from the other coloured people.

Politically the coloured people have equality with the white man in the Cape Province, and Government policy groups them with the white man as "civilized" labour. They comprise most of the semi-

skilled and petty tradesmen of the Cape and are the labourers in those parts where the black man is not resident. They speak Afrikaans and their standard of living is more or less the same, as their economic and social equivalents maintain in European countries. They lay emphasis upon their difference from and superiority to the "native," and on their common interests with the European population.

The Asiatic Population. Of the 219,928 Asiatics in the Union, 180,842 live in the Province of Natal—only 2883 fewer in number than the white population of that province. Until about ten years ago they actually outnumbered the European population. Until self-government was granted to the Colony of Natal, the Indians enjoyed more or less the same political rights as the Europeans, but these have been whittled down by colonial, and subsequently by Union, legislation, until there is almost no trace left of them. The first Indians were indentured coolies imported for labour on the sugar plantations of Natal.

Most of these indentured coolies remained in the country, settling down as small gardeners, traders, and hawkers. They were followed by more well-to-do merchants, mainly from Bombay. Much of the commerce of the Province is in Indian hands, and their large numbers and low standard of living have caused considerable friction between them and the white population. The Government has tried to cope with the problem by instituting a system of bonus payments to all Indians returning to India. While this policy has reduced their numbers to some extent, its effectiveness is petering out. The majority of the remaining Indians is South African born, and though their standard of living is low compared with that of the Europeans, it is too high in comparison with Indian standards to induce their return to India.

The Indian Government maintains an Agent-General in the Union of South Africa, who is charged with the representation of Indian interests. The number of Indians in the Orange Free State hardly exceeds a score, and restrictions on land owning and other rights in the Transvaal have proved an effective means of limiting their numbers in that province.

PHILLIPS, SIR LIONEL, Bart., D.L., J.P. (1855-1936). Chairman of the Central Mining and Investment Corporation, Ltd., and formerly partner in the firm of Wernher, Beit & Co. Born in London. He went to South Africa in 1875, where he was in close association with Cecil Rhodes and Alfred Beit. He made Johannesburg his headquarters in 1889, and took an active part

in the founding of the gold industry, with which he was closely identified up to the time of his death. He was a member of the Reform Committee, and was one of the four Uitlanders sentenced to death at the time of the Jameson Raid, the sentence being commuted on payment of a fine of £25,000. He served as President of the Transvaal Chamber of Mines in 1892-95, and again in 1908; and from 1910 to 1915 he sat in the Union Legislature as member for Yeoville, Transvaal.

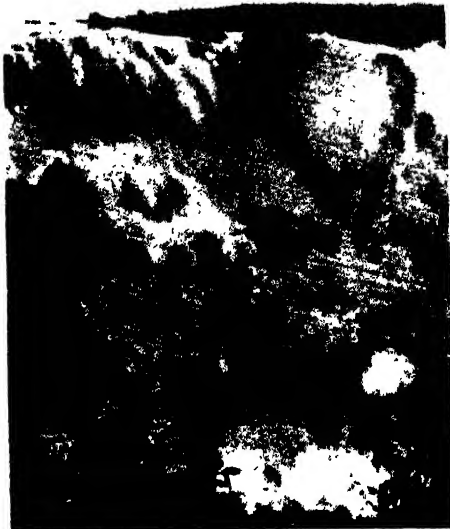
PHYSICAL FEATURES AND SCENERY.

On the west the Union is flanked by the South Atlantic Ocean, on the south and east by the Indian Ocean, and on the north by South-West Africa (formerly German South-West Africa), Bechuanaland Protectorate, Southern Rhodesia, and Portuguese East Africa. Enclaves within the Union territory are the protectorates of Basutoland and Swaziland, under Imperial control.

The physical conformation of Union territory is that of an elevated tableland, 40 per cent of which lies over 4000 ft above sea-level. On the south, east, and west of this plateau is a rim or escarpment, on the outer edge of which are diversified tracts of country. Sections of this coastal belt are fertile and flat, but elsewhere it is rugged and mountainous. The plateau covering hundreds of thousands of miles, not unlike a saucer in shape, slopes downwards to the north-east, merging in the Kalahari desert.

The escarpment is the only mountain range of any importance in the Union and nowhere does it rise above 11,000 ft. Its highest peaks are in the Transvaal and

the Union, and from it to the west flow streams which later join the Orange River or the Vaal, to find their way to the Atlantic, while on the east rises the Tugela, Natal's



ICANDU FALLS, NEAR NEWCASTLE, NATAL

Photo: South African Railways

most important river, flowing to the Indian Ocean.

Farther south, the range forms the boundary between the Orange Free State and Basutoland, where it is known by both the names of Drakensberg and Quathlamba Mountains. Then the escarpment turns west, through the Cape Province, under the names of Stormberg, Sneeuwberg, Nieuwveld, Komsberg, Roggeveld, Bokkeveld, and Kamiesberg. Metrosberg, the highest peak in the Cape Province, rises to 7000 ft. above sea-level. It is capped with snow for several months of the year. The escarpment turns north, approximately parallel with the coast, to beyond the Cunene River.

The whole of the Transvaal, the Free State, and one-third of the Cape Province is on the plateau, an area of extensive plains broken up by flat-topped hills. It has a foundation of hard rocks, folded in the early days of the earth's formation, afterwards covered by horizontal beds of shale and sandstone. Sheets of dolerite penetrate the beds to form hills at various points in northern Transvaal, Griqualand West, and Namaqualand.

The plateau can be divided into—

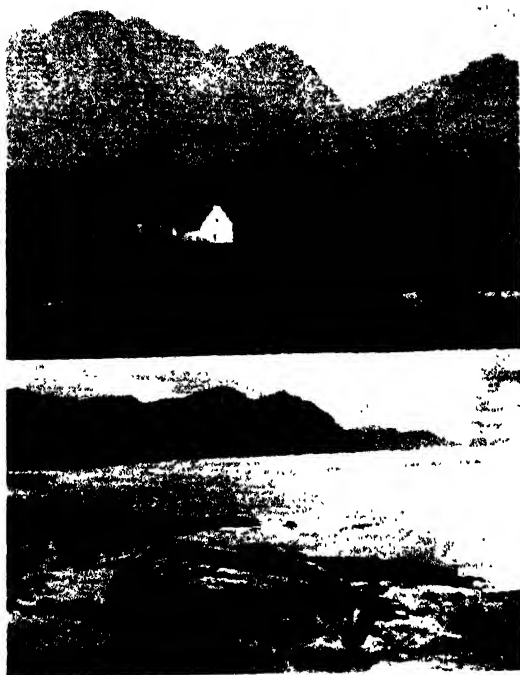
1. The High Veld This area includes southern Transvaal and the Orange Free



MODDER RIVER, A GLEN NEAR BLOEMFONTEIN

Photo: South African Railways

Natal regions where the range is known as the Drakensberg, or Dragon mountains. The Drakensberg extend like a giant backbone through these two States, reaching its highest points at Giant's Castle and Mont-aux-Sources. This area is the very roof of



VARIED SCENES

Top: Homestead in the Hex River Valley

Bottom: Fishing Harbour, Hermanus

Photos: South African Railways

State. Most of it is rolling, treeless grassland, from 5000 ft. to 6000 ft. above sea-level in the east, falling gradually to about 4000 ft. in the west. Clumps of acacia and rocky kopjes, on low rounded hills, break the monotony of its surface.

2. The Middle Veld lies between 3000 ft. and 6000 ft. above the sea and has a wide variety of vegetation. The chief hill ranges are the Magaliesberg and Gats Rand.

3. The Upper Karoo, in the Orange Free State. This region suffers from severe droughts and in the north-west is practically a desert, but in the south and east, farming is possible near the alluvial tracts of the valleys.

4. The Transvaal Bushveld is warmer and drier than the high veld. Lying between 1500 ft. and 4000 ft. above the sea-level, it has great variation of climate and vegetation. Remarkable features of the bushveld are the Pilansberg mountains of volcanic rocks, and the Pretoria salt-pan, a volcanic neck encircled by granite hills, and lying 200 ft. below the surrounding country.

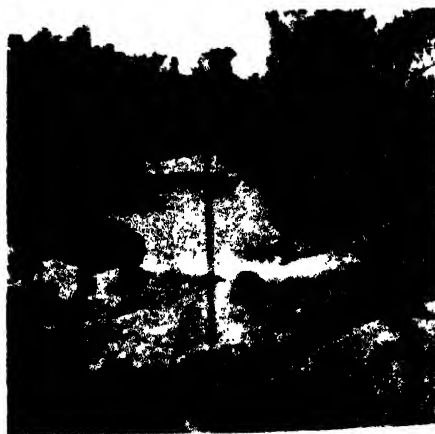
Extensive areas of the plateau have been denuded of trees, with the result that great

plains that were once swarming with game are now unable to support equal numbers of stock, because the rainfall, formerly retained in great part by surface vegetation and forest, is now largely drained away by "dongas." These dongas are gullies which carry the rain away rapidly.

Territory between the edge of the escarpment and the ocean equals the plateau itself for variety of characteristics. In the southernmost province there are parallel ranges of mountains, rising as terraces from the sea. Upwards from Mossel Bay there is first a narrow coastal plateau, several hundred feet above the sea, then the Langeberg and Outeniquas ranges, the plateau known as the Little Karoo, then the Groot Zwarte Bergen, the Great Karoo, finally rising to the Nieuwveld, over 4000 ft. high. Frequently the ranges are broken up by fertile valleys.

The Great Karoo at one time was believed to be desert land uninhabitable by man or beast, but transport and well-sinking have so improved conditions that it has gradually become more and more occupied. The driest parts are the Tangaa Karoo and the valleys of the Dwyka and Gamka rivers. Grass appears only in exceptionally rainy seasons.

Farther south, in the Folded Belt area, terraces and tablelands separated by deep valleys are striking features. The Palm Belt, stretching along practically the whole



GREAT LETABA RIVER, NORTHERN TRANSVAAL

Photo: South African Railways



CONTRASTS IN SCENERY

1. River valley of the Umkomas, Natal. 2. In the Namaqualand desert. 3. Cape Point.

Photos: South African Railways

of the east coast of the Union is characterized by hot wet summers that produce palms, wild bananas, and semi-tropical vegetation. The eastern grassveld, from 1000 ft. to 4000 ft., rises in terraces between the palm belt and the escarpment, and on the eastern slopes of the escarpment itself is what is named the eastern mountain grassveld.

The plateau is drained almost entirely by two rivers, the Orange and its tributaries and the Limpopo, or Crocodile River. Others are little more than gushing streams which overflow in the rainy seasons and become partially dry at other periods. The most important waterway is the Orange River, which, rising in the Drakensberg, constitutes with its two main territories, the Caledon and the Vaal, the basin in which the greater part of the Union is drained. Below its confluence with the Vaal, some 600 miles from its mouth, however, the Orange River receives practically no water for the greater part of the year and towards the west it frequently becomes nothing more

than a succession of pools until the rains have resumed. Three hundred miles from the ocean at Aughrabies the river goes over a fall of 400 ft. and commences its downward course over a series of rapids which are maintained up to 25 miles from the mouth.

Northern Transvaal is drained by the Limpopo tributaries, the Limpopo itself, rising in the Transvaal, constituting the boundary between that state and Southern Rhodesia for a considerable distance, finally breaking through the eastern escarpment, in Portuguese East Africa, to find an outlet in the Indian Ocean. Below the escarpment, the Limpopo is joined by the Oliphants River, which has a separate valley through the escarpment after draining an important part of the bushveld.

Neither river, however, is of use for navigation purposes, for their estuaries are frequently obstructed by sand bars. Between the escarpment and the ocean there are smaller rivers which rise at the foot of the escarpment or in smaller ranges. In Natal they flow swiftly in deep valleys with



ON THE VELD

Oxen pulling cars through a "spruit" after heavy rain near Schaapplaats, Clarens, Orange Free State. The mountain in the background is Generalskop.

Photo: Brownholtz

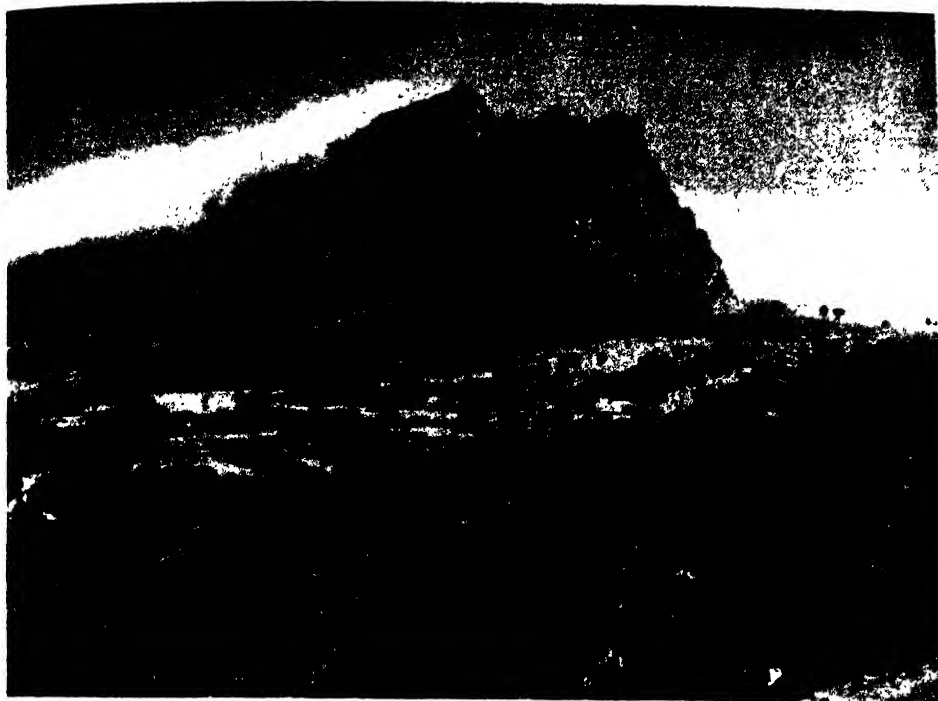


TABLE MOUNTAIN FROM KLOOF ROAD
Photo South African Railways

frequent waterfalls. In the Cape of Good Hope, the rivers tend to flow in the valleys between the ranges until they can find an outlet to the sea. Such rivers, particularly the Great Fish River and the Sundays River, are important for irrigation purposes.

All the rivers are liable to sudden freshets which sweep down with great force and render the fords impassable, until they have subsided, which generally happens within a day or so. The largest inland water surface is the Fundizzi Lake. Its length is 3000 ft. Scattered over the surface of the plateau, however, are many shallow pans or Vleis. These are large low hollows, which in times of heavy rainfall are filled with water. When dry, many of these pans are covered with deposits of salt.

The Union is rich in magnificent scenery. Streams that are torrential for certain parts of the year, falling swiftly over deep precipitous waterfalls and valleys; towering mountains, abounding in peaks and buttresses, enormous plateaux thousands of square miles in area, make South Africa a country of vivid contrasts. The Karoo, sometimes said to be dreary and dull, is to many a land of intense primitive beauty. The flat-topped hills, silhouetted against a

purpling sky, help to create a sunset perpetually beautiful.

The Cape Province is a land of fine highland scenery. Here, the mountains are of hard resistant sandstone, called Table Mountain Sandstone from Table Mountain, which rises almost perpendicularly to a height of 3582 ft. behind Capetown.

On either side of Table Mountain are two lesser peaks, Devil's Peak (3270 ft.) and Lion's Head (2180 ft.), connected by a spur with Lion's Rump (1147 ft.).

Between the lofty mountains, that cut off this extremity of South Africa from the Karoo, are long winding valleys, many of which in the rainy season are filled with roaring rivers, surging in cataracts to the sea. In the heart of one of these ranges are the famous Cango Caves, limestone caverns of great splendour. These caves in the Zwartberg have been explored for at least 2 miles through a succession of lofty halls, eerie grottoes and pillared corridors, wonderful in natural colouring and ornamentation.

The Union is famous for its spectacular waterfalls and for its national parks. Of the waterfalls, one of the most notable is the Tugela series in the Drakensberg National Park, where a series of cascades, collectively

exceeding 2000 ft. in height, fall through a 6-mile gorge.

Near Howick, the Great Ungeni River leaps 365 ft. into a bush-clad ravine, forming one of the most picturesque of African waterfalls. The cataract of King George, 24 miles west of Kakamas, descends 450 ft. into a rocky 6-mile channel. The Tsitsa Fall, 44 miles from Umtata, is an almost vertical precipice over which the water plunges from a height of 400 ft.

PIROW, OSWALD. He is the Minister of Defence for the Union and a former Minister of Justice. He studied at Heidelberg and was called to the Bar from the Inner Temple, London. When he entered the Hertzog Ministry in 1929 he was its youngest member, but already had attained prominence as a leader of the republican wing of the Transvaal Nationalists.

PLANT LIFE. South Africa is rich in the wide variety of its vegetation, due to the extremes of altitude, rainfall, and climate. In one region, that stretching from the Oliphants River on the west coast to Port Elizabeth on the south, and as far north as the Cape Mountain ranges, there is to be found one of the richest floral regions in the world, different from and much older than the flora of the remainder of the Union. Large tracts are covered with bulbous and tuberous plants, of the orders of *Iridaceae*, *Liliaceae*, *Oxalidaceae*, such as "Cape Bulbs," and others, of such fame that they have been introduced into Europe for cultivation. Elsewhere, tropical and sub-tropical vegetation are found in great abundance, broken up into bushland, parkland, mountain grassland, and vast grass plains. Colloquially, the desert and semi-desert region, in territory where the rainfall is between 5 in. to 15 in., is termed "Karoo"; grassland is termed "highveld" or "grassveld," receiving from 15 in. to 25 in. of rain per annum, and the parklands and forests are usually described as "bushveld," having a rainfall varying from 25 in. to 45 in. and more.

The central plateau produces a flora of its own, consisting mostly of succulents and karoo bushes, whilst eastwards the desert areas similarly possess a distinctive flora.

Extending northwards, along the coast from East London, is a sub-tropical strip of country in which is found a bush of a more tropical character than is seen elsewhere in South Africa. The vegetation includes mangrove swamps, palm belts, thorn thickets and streambank bushes, thriving on a rainfall that varies from 30 in. to 50 in. Sometimes called Palm Beach, this strip is famed for the variety of wild date palms (*Phoenix reclinata*), Ilala palm (*Hyphaene reclinata*), the endemic pondoland coconut palm (*Jubae-*

opsis caffra), wild banana, red milkwood, white pear, etc. Tropical and semi-tropical bushes to be found in this area are *Hibiscus liliaceus* and *Barringtonia racemosa*. Climbing plants and lianas grow freely in the bush areas which are favourable for the growth of shade-loving plants.

Cape shrubs, found in the south-west extremity of the Union, consist of low bushes, ranging from 1 ft. to 6 ft. high, with dull leathery leaves, of a colour that is a heavy grey tinged with green. *Rhenoster* bush covers large tracts, and among others are species of *Proteaceae*, *Ericaceae*, *Thymelaeaceae*, etc. Between the Cape and the escarpment, Karoo vegetation is to be found growing plentifully, specimens including succulents such as *mesembryanthemum*, *euphorbia*, *pelargonium*, etc.

Grasslands. The Transvaal and the Limpopo bush veld, also known as Eastern Savanna, stretches northwards from Pretoria to the lower and warmer regions of the valley of the Limpopo. It is parkland of a continuous character, but its monotony is frequently broken by trees. Sometimes these grow but sparsely, but at times they constitute miniature forests. On altitudes between 4000 ft. and 5000 ft, thornbush and succulents grow extensively, amid numerous species of deciduous acacia.

In the eastern mountain grassland areas of the Orange Free State, Natal, and the Transvaal, the grass, instead of growing evenly, grows in distinct tufts; and there are usually bare patches surrounding the tufts. The leaves of nearly all the grasses are hard, narrow, and infolded. Bulbous plants, herbs, bracken, tree ferns, and composites, are common amongst this grass. Bushes that are common in the mountain grassland areas are Suikerbossies, Oudehout, Saliehout, and Quinine-berry.

The High Veld is a treeless, temperate grassland in the south-east of the Cape, consisting of vast rolling plains 4000 ft. above sea-level, and covered with a grass that in summer reaches the height of 3 ft., and is uniformly green. In the winter months it turns to a drab russet, which gives it the name of red grass. Characteristic grasses include rooi grass, besom grass, the turpentine, the steekgrass, the wild oat, etc.

Among the grass, perennial herbs and shrubs are numerous, and in the spring they cover the veld with beautiful pink, white, and mauve flowers. Among the commonest of these shrubs are elandsboontje, wild verbena, and wild sweetpea.

Desert Vegetation. This includes vegetation found on the Kalahari thorn country, the Karoo semi-desert which stretches between Port Elizabeth and East London,



SOUTH AFRICAN FLOWERS

1. *Protea Abyssinia*. 2. *Stapelia Schinzii* (South-West Africa). 3. *Richardia Angustiloba*. 4. *Babiana Obliqua* (Cape Province). 5. *Bolusanthus Speciosus* (Transvaal, Rhodesia, and Portuguese East Africa). 6. *Disa Crassicornis* (Cape Province). 7. *Mesembryanthemum Crassipes* (Cape Province). 8. *Anemone Capensis* (Cape Anemone).

and the Namaqualand coastal desert, which extends north from the Oliphants River region.

The Kalahari thorn country is made up of thorn bushes and tufts of desert grasses. On the sand-dunes in the south-west region grows a variety of grasses.

Desert shrubs dominate the whole of the Karoo semi-desert. The plants are of uniform height, most characteristic being the driedoring, the brosdoring, and the klapperbos. Common succulents are the kraalbos, the botesboorn, etc. Northwards, on territory lying above 4000 ft., driedoring dominates, growing to a height of about 4 ft. At certain seasons, after the rains, the bush is densely covered with white flowers. Another species of driedoring, to be found on the rocky kopjes, has bright yellow flowers.

Gravel plains on the Namaqualand coastal desert, also known as the Namib, are practically destitute of plant life. Occasionally scanty growths of vogelstruisgras and twaa grass are found. Low-lying river valleys of this area are frequently covered with spreading bushes of *Euphorbia gregaria*. In the Orange River valley is found an apocynaceous plant, known as the elephant's trunk, which grows to a height sometimes greater than 12 ft., and bears at its crown a few small leaves and flowers.

POLITICAL AND SOCIAL ORGANIZATION. After the conquest of the Boer Republics in 1902, a strong movement in favour of the unification of the four South African colonies, the Transvaal, Orange Free State, Cape and Natal, resulted in the adoption of a "unified" constitution by a National Convention in 1909. Its terms were embodied in the South Africa Act of 1909, which with its amendments, and as implemented by the Statute of Westminster, is the basic law of the South African Constitution.

Constitution. The South Africa Act of 1909 provides for a "unified" as opposed to a "federal" system of Government. The Central Government is supreme and is vested in the Crown, represented by a Governor-General appointed by the King on the advice of his South African ministers, and the two Houses of Parliament. The Central Government may delegate certain powers to Councils elected by and for each of the four provinces. Capetown is the seat of legislature, Pretoria is the administrative capital.

The Cabinet is known as the Executive Council and consists of twelve ministers, who must be members of one of the Houses of Parliament. Ministers are responsible for the departments of State entrusted to them. Their selection, the formation of a

Ministry—the conditions of office follow British constitutional practice.

Parliament. Legislation is vested in two Houses of Parliament, the lower house known as the Legislative Assembly, and an upper house known as the Senate. Parliament must meet at least once every year, and only Europeans may be elected as members of either House.

Election to the House of Assembly (which at present consists of 150 members) is by the votes of adult males and females who are Union Nationals. In the Cape Province "coloured" males are admitted to the same electoral rolls with Europeans, subject to an education and property or wage test. Formerly, adult male Bantus in the Cape could be admitted to the rolls on similar qualifications, but since 1936 the province has been divided into three territorial constituencies in which enfranchised Cape Bantus, on a separate roll, are entitled to elect three Europeans to the House of Assembly and two Europeans to the Provincial Council.

The House of Assembly is elected for five years, unless sooner dissolved by the Governor-General.

The Senate consists of forty members, eight elected for each province, and eight nominated by the Governor-General in Council, of whom four "shall be selected on the grounds of their acquaintance . . . with . . . wishes of the coloured races of South Africa." Election takes place, in respect of each province, by members of Parliament for that province in joint session with the members of its Provincial Council. The Natives Representation Act, of 1936, enables the natives of South Africa to elect two Europeans in the Senate under a communal franchise.

The Senate may not amend money bills, but can reject other bills which have been passed by the Assembly. Provision is made for the joint sitting of both Houses in case of their disagreement, in which case it may be possible to secure a majority in favour of a rejected measure.

The Provincial Administration. At the head of each provincial administration is an administrator, appointed by the central government. He is assisted by an executive committee of four members of the Provincial Council, which is elected in the same manner as the House of Assembly. The Councils possess certain powers of legislation, taxation and administration, controlling primary and secondary education, hospitals, local governing bodies, roads, bridges and other local matters. Their finances are subject to the veto of the central government.

The Public Service. The administration

of the central government is carried out by a public service operating under an extensive Public Service Act. A permanent Public Service Commission of three members makes recommendations to the Minister concerned as to appointments, promotions and dismissals, exercises general supervision over the organization of the Service, and has extensive disciplinary powers. It is assisted by a Public Service Advisory Council elected by the civil servants from amongst their members. The provinces maintain their own service and have limited rights of appointment, frequently effected by interchange with the central administration.

Relations with United Kingdom and Abroad. Previous to the Statute of Westminster, the offices of the High Commissioner and Governor-General of the Union of South Africa were vested in one person. Nowadays, however, the British Government, as apart from the Crown, is represented in South Africa by a High Commissioner, who also supervizes the affairs of the native protectorates which do not fall under the Union Government, i.e. Basutoland, Bechuanaland, and Swaziland.

The Governor-General has no direct relations with His Majesty's Government in the United Kingdom. The Union maintains a High Commissioner in London who is an

intermediary between the King and his South African Government.

The South African Government also maintains diplomatic representatives in several foreign countries, as well as trade commissioners and consular officers in Empire countries and foreign States.

A special South African representative is accredited to the League of Nations at Geneva. Close relations with the League of Nations are dictated in the first place by South Africa's administration of the mandatory territory of ex-German South-West Africa.

Industry and Labour. In the past South Africa has not been without industrial unrest, and the so-called Witwatersrand "revolution" of 1922 was only one of the last of almost a decade of recurrent strikes. Since 1924, however, there has been remarkably little industrial unrest as a consequence of legislation, directed mainly at the establishment of machinery for industrial conciliation, for the fixing of minimum wages by a statutory government board, by the institution of old-age pensions and compulsory workmen's compensation and insurance, and a number of social "rehabilitation" schemes. See **GOLD MINING AND OTHER INDUSTRIES, TRADE.**

Industrial Conciliation Acts—1924, 1930.



PIETERMARITZBURG

The capital of Natal.

Photo: South African Railways



WEST STREET, DURBAN
Photo: South African Railways

and 1933. The Acts apply to every industrial and public utility undertaking, to every industry, trade and occupation, and to every employer and employee in such undertakings, with the exception of agriculture and government employment. The establishment of Industrial Councils by employers' organizations, on the one hand, and registered trade unions on the other hand, is provided for the regulation of disputes between employers and employees. The Councils consist of an equal number of representatives of either section, and in case of dispute may apply to the Minister for the appointment of a mediator, assisted by arbitrators appointed in equal numbers by each side of the dispute. The awards made by mediator and arbitrators are binding and strikes and lock-outs become unlawful when the Minister has ratified the decision of the arbitrators.

Wage Acts—1925 and 1930. These Acts provide for the constitution of a Wage Board for the Union, consisting of three permanent members, with power to add a member to represent employers and one to represent employees. The Board begins to function upon reference by the Minister, or on application by a registered trade union, or association of employers for investiga-

tions in respect of the trade or occupation concerned. After examination the Board submits a report and a recommendation as to wages and conditions of employment to the Minister who may, after certain formalities, make a "determination" binding upon employers and employees in the trade and areas concerned.

Wages and conditions of employment are fixed for occupations, and it is not permissible to distinguish between the wages of white and native employees. The effect of these arrangements, however, seems to have been to exclude the great bulk of native labour, which is less efficient than white labour, from positions defined as semi-skilled and skilled, carrying prescribed wages based on the European standard of living.

Workmen's Compensation and Miners' Phthisis Relief. The Workmen's Compensation Act of 1914 which provided for compensation for injuries suffered by workmen in the course of their employment, or for death resulting in any such injuries, has been superseded by the Act of 1934, which, adopting the existing principle of employers' liability, provides machinery for the compulsory insurance of workmen against injury and death.

The most dangerous occupational disease in South Africa is miners' phthisis or silicosis. A statutory body, the Miners' Phthisis Board, is charged with the administration of various Acts ensuring both payment of compensation in the various stages of phthisis and the prevention of further dangerous employment of miners in the initial stages of contraction of the disease. The funds of the Miners' Phthisis Board are provided under law by the mining companies, who have also by their support of the Institute of Medical Research, and by the installation and application of the most modern appliances and methods, reduced the dangers of phthisis in a most remarkable manner.

The "Poor White" Question. For some time the so-called "poor white" question had been becoming acute. Ever since the Boer War the number of farmers able to farm economically has decreased, and an increasing migration from country to town has taken place, where this new "proletariat" was thrown into competition with natives at so-called "Kaffir" wages. The Union Government has attempted to solve this problem by "rehabilitation" schemes, the intention of which is to replace the townward trekkers on the land.

Generally the system works by a series of promotions. Relief workers upon roads and irrigation works who reveal initiative, a capacity for hard work and thrift, pass through forestry settlements (established for the purpose of restoring wasted timber) and the best men become eligible for promotion as "tenant farmers" in State supervised colonies. Here plots of land are allotted to them and their agricultural activities, as well as their social life, is under the constant guidance of technical and welfare officers. After a period of this form of apprenticeship they may qualify for grants of land and may continue to receive State aid until such time as they can fend for themselves, when the process of "rehabilitation" is considered to have been concluded.

Perhaps the greatest problem welfare workers are faced with in South Africa is that certain occupations have been popularly stigmatized as being fit only for "Kaffirs." Domestic service, for instance, at one time almost a monopoly of former warrior races like the Zulus, was considered derogatory to the dignity of any white man or woman. Considerable progress has been made in breaking down prejudice, and making new occupations available to Europeans; natives displaced from such occupations are readily absorbed in mining and agriculture.

An interesting rehabilitative measure is the system of "special service battalions" administered by the Department of Defence.

Unemployed youths of sound physique are enrolled under military discipline for the purpose of occupational training.

Liquor Laws. In general prohibition exists as far as the natives are concerned, but there is provision for the supply of native beer of low alcoholic content and good quality by municipal and government authorities and certain employers. These exemptions do not apply to the consumption of spirits.

Coloured people fall under the prohibition laws in the Transvaal and Orange Free State, but are permitted the same privileges as Europeans in the Cape Province, provided they are on the voters' rolls. In Natal off-consumption is not permitted in the case of Asiatics; they are free to consume liquor in licensed houses.

As far as Europeans are concerned, the laws exercise strict control over the issue and limitation of liquor licences, and hours and locality of sale. Women are not permitted to enter bars, and natives and "prohibited" persons are not allowed to work in bars.

PORT ELIZABETH. A port on Algoa Bay sheltered by Cape Recife. There are ex



MAIN STREET, PORT ELIZABETH
Photo: South African Railways

cellent facilities for loading and unloading cargo. Port Elizabeth is the third port of the Union. In 1935, 789 ships of a total tonnage of 3,830,342 entered Port Elizabeth. The white population in 1936 was 53,448, and the total for all races was 109,824.

POTGIETER, ANDRIES HENDRIK. He was the leader of one of the Dutch parties that made the Great Trek. On reaching the Vet River, Potgieter bought the land lying between the Vet and the Vaal. He and

eleven others then explored the country northwards as far as Zoutpansberg, but on his return he found that many of his party had been massacred by the Matabele. Potgieter, assisted by Gerrit Maritz, leader of another section of the Boers, attacked the Matabele. Potgieter proclaimed all the territory south of the Limpopo River forfeit to the immigrants and concluded treaties with the Bechuana and Basuto tribes dispossessed by the Matabele. He took part in forming what was styled the Republic of Natalia, with Pietermaritzburg as its capital. Later Potgieter set up a rival government at Potchefstroom.

PRETORIA. See article, Vol. VII.

PRETORIUS, ANDRIES WILLEM JACOBUS (1798-1853). A leading member of the Voortrekkers. Dissatisfied with conditions of British rule in the Cape, he led a strong party of Boers to Magalisberg, north of the Vaal and outside British sovereignty. Upon arrival there, in 1838, he was chosen by the Boers to be their Commandant-General. Pretorius and Potgieter avenged the death of Retief, murdered by Dingaan and his Zulus, and founded the republic of Natalia with Pietermaritzburg as the capital. He again came into conflict with the British, and in 1848 he was defeated by Sir Harry Smith. Later he signed an agreement, known as the Sand River Convention, by which the British Government guaranteed to the Boers north of the Vaal the right to maintain their own forces without interference.

PRETORIUS, MARTINIUS (1819-1901). Son of Andries Pretorius. Elected President of the Orange Free State in 1859, he resigned in 1863 to become President of the Transvaal. Following boundary disputes with Bechuana chiefs, he referred the questions at issue to R. W. Keate, the Lt.-Governor. The award went against the Boers and when the Volksraad refused to accept it, Pretorius resigned his Presidency.

QUAGGA. See article, Vol. VII.

RATEL. See article, Vol. VII.

REITZ, DENEYS (born 1882). Statesman and third son of Francis William Reitz, former President of the Orange Free State. He fought with both Botha and Smuts during the Boer War and at its conclusion exiled himself at Madagascar. Persuaded by friends, he returned after a short time and practised as attorney at Heilbron. He fought on the side of the government in 1914 and commanded a regiment in German East Africa in Smuts's campaign. Then he went to France to command a battalion of the Royal Scots Fusiliers, being twice severely wounded. In 1921 he was appointed Minister of Lands, and in 1933 he became Minister of Agriculture and Forestry.

REITZ, FRANCIS WILLIAM (1844-1933). President of the Orange Free State from 1888 to 1895. Reitz studied law in London, and after practising at the Cape Bar for a time, went up to Bloemfontein to become Chief Justice of the Orange Free State at the newly formed High Court. On the death of Brand in 1888 he became President of the Free State. His constant aim was to bring about an alliance with the Transvaal. In 1894 he was re-elected, but in the following year resigned for reasons of health. He was appointed State Secretary to the South African Republic in 1899, and on the formation of the Union in 1910 became President of the Senate. He resigned the Presidency in 1920, but continued as a Senator until 1929.

RELIGION. The present writer does not pretend to cover the whole ground of this wide subject, but as a practical worker and as a traveller all over the Union, he can give some outline sketches of the subject as a whole.

He writes as a Christian, and as an Anglican, and can be discounted accordingly, but also as one who has always tried to understand the spirit and appreciate the good of other religions.

There are no doubt exceptions, but the natural religion of the Bantu race is a vague belief in some Great Spirit, tinged with a belief in the survival, in some form, of their ancestors, plus a lively faith in witchcraft and the existence of evil spirits.

In Basutoland the dominant evil spirit is named Tukulosi, and is a compound of bear and man, and hangs round the huts at night and strangles the villagers. He can be "set on" to a victim by any enemy who bribes the witch doctor for the purpose.

The idea of the stay-at-home Englishman who is too superior to support missions, is that the carefree heathen enjoy some Eden-like simplicity of faith and that it is a shame to destroy this beautiful child-like belief. As a matter of fact this is the merest moonshine. The heathen are riddled with superstitious fear of evil spirits who haunt their homes and their lives, and Christianity when fully received, has all the character of a great rescue.

It delivers them from fear of malignant spirits and gives them a standard of morals unknown before. The present writer has but one test: "Look at their faces," and by that test before and after their acceptance of Christianity he would be content to let his native people be judged.

What the Christian religion does for the heathen is to free him from fear and to give him a higher morality.

With this background it is really easy to

teach Christianity, for there is nothing much to hinder it. Old superstitions survive, witch doctors still abound, and are a real power. They certainly have knowledge of



IFOPARD MEN

The dance of the men of the Abakweta tribe has a religious significance.

Photo. South African Railways

cures, and a great deal of understanding of native human nature, and those of us who have lived there are considerably impressed with the fact that the evil spirits they evoke seem to have real power—interpret this as you may. We do not despise the power of the witch doctor: but it is on the whole evil. So are the "Circumcision Schools," which are still very mysterious, in which bands of boys and girls are taken (separately) to remote places, and there initiated into various forms of manners and behaviour and given sex and other instruction. Some of this initiation which teaches hardihood is good, but our native Christians regard it all as evil on the whole.

But Christianity in South Africa has no organized religious system to face. There is no Hinduism or Buddhism or Mohammedanism (on any scale). So the fact remains that there is an open field for Christianity, intellectually and morally, and the response would be vast if there were sufficient men, and money to pay for schools. It may well be that Christianity will pay the price of its inertia by a wholesale loss of possible Christians to Mohammedanism if the latter spreads down from the north. Mohammedanism might suit the native better in so far as its demands on morality are less and its sense of brotherhood and equality greater—the latter a lesson which many Christians have yet to learn. Certainly we shall not win the native to Christ until our Christianity cuts clean across colour. There

is no question of intermarriage, which the native abhors, nor of social intercourse, which he does not desire; but until the "colour-bar" is removed in religion, the native will never be won *en masse*. It is not even a question of worshipping in the same church; the native prefers his own church for his own people, but the "spirit" of brotherhood in Christ is still lacking, and that will be fatal unless learnt.

Working in South Africa among these natives are some of the many divisions of a divided Christianity in Europe. On the whole I do not think the native minds that much. He is used to different tribal customs and different native nationalities, and he quite refuses to be a bigot. There are small missions strong in a few places such as the French Protestant Mission in Basutoland, with headquarters at Morija, where devoted men of the type of Casals have worked for a hundred years with much success. The London Missionary Society works in Bechuanaland and had a great influence with Khama, the celebrated chief of those regions.

In South Africa, generally, the Dutch Reformed Church has done the greatest and widest work. Their adherents probably number about 500,000, and the religion is Calvinistic, sternly disciplined, and has an exceedingly strong hold on the Dutch-



WITCH DOCTORS

The client (centre) is obviously deeply impressed, for the reputation of the witch doctors is high, though their influence is deplored.

Photo. South African Railways

speaking South Africans. It has a somewhat narrow theology, but its ministers are men of much learning and devotion, and are true pastors to their people and beacons of culture in their isolated "dorps." The Dutch people are a truly religious people; they read their Bibles; they go to Communion (Nachtmal) with regularity



CHURCHES

1. Settlers' Church at Bathurst, dating from 1820. 2. Dutch Reformed Church, Cape Town. 3. St. George's Cathedral, Cape Town (Anglican). 4. Church at Potchefstroom where President Kruger was married. 5. The Cathedral, Pietersburg (Roman Catholic).

Photos. South African Railways

and deep preparation; and they have a genuine respect and courtesy towards ministers of religion.

The next body in size and numbers is the Anglican Church, known in South Africa as the English Church or the Church of the Province of South Africa, rather a cumbersome title.

There are five or six dissident congregations who hold that the Church in South Africa should be Church of England, a bit of English ecclesiastical life transplanted to South Africa. But as in Japan, the United States, India, etc., the Church of England cannot be transplanted abroad. Independent churches in full communion with Canterbury just grow in the same way as Canada,

New Zealand, Australia, and South Africa have grown in a political sense.

The Church of the Province is a daughter and a sister of the Church of England; it is identical in origin and life, but has its own features and development, its own Prayer book, etc., and its own laws and rules.

The Church is divided into fourteen or fifteen dioceses with its Metropolitan See at Cape Town, and is the second body in numbers in South Africa. It has a large missionary work including the wholly missionary diocese of Lebombo, and Zululand, which is almost entirely missionary.

The Methodists have also done a great work in South Africa. Their native work is probably the most widespread of all, and

their ministers are energetic and capable. The Presbyterians, who are similar in organization to the Dutch Reformed Church, exhibit all the qualities of Presbyterianism elsewhere; their ministers are learned, gracious, eloquent, and largely Scots; but their presence is an assurance of stability and sound learning.

The Roman Catholics are growing apace and devote much time and money to missionary work on a very large scale. As always, they keep themselves very much to themselves, whereas all other bodies in South Africa fraternize much more than in England.

Besides these main sections there are other interpenetrating influences and societies in South Africa. The "Oxford group" has its staunch adherents; there are Seventh Day Adventists, Four Square Gospellers, and many obscure native sects.

As a whole the outlook is very favourable. South Africa is filled with decent citizens of a new and developing nation; the Dutch are mainly great gentlemen of courtesy and hospitality; and given time South Africa will be one of the delectable countries of the world. And it is a religious country. The Dutch are profoundly religious; the English community—especially the farmers—are fair and just to religion and go to church well and, which is so very important, are religious in life as well as in profession.

The native also is deeply religious; it only remains to turn his religion into the best and truest channel.

RETIEF, PIET (1780-1838). Commandant and President of the Voortrekkers. After he and General Maritz had crossed the Drakensberg into Natal, Retief visited Dingaan, the Zulu chief, and made a request for land. Dingaan pretended to concede the request, but on 6th February, 1838, the Zulus suddenly attacked and treacherously murdered the Dutch.

RHINOCEROS. See article, Vol. VII.

RHODES, CECIL. Founder of Rhodesia. See article, Vol. VII.

RIVER-HOG. See article, Vol. VII.

ROBINSON, SIR JOSEPH BENJAMIN (born 1840). Financier. He made his fortune in the diamond rush in 1867, on the Vaal River, by purchasing stones from the natives and by buying diamond-bearing land. He was Mayor of Kimberley in 1880, and for four years represented Griqualand West in the Cape Parliament. When gold was discovered on the Witwatersrand in 1886, he purchased the Langlaate and Randfontein estates. For a short time he became involved in financial difficulties and was helped materially by Alfred Beit, a step which led to the formation of the Robinson Syndicate.

Later he became one of South Africa's richest men.

ROOS, JOHANNES DE VILLIERS TIELMAN (1879-1935). Well-known nationalist who was popularly known as "The Lion of the North." He practised as a barrister in Pretoria before the Boer War, but did not come to the forefront of politics until he helped Hertzog to form the Nationalist Party in 1912. In 1915 he was elected to Parliament for Lichtenburg, and was a recognized leader of Nationalist opinion. He played a prominent part in achieving the pact with the Labour Party in 1924, and in the succeeding Hertzog administration he became Deputy Prime Minister and Minister of Justice. He resigned from Parliament in 1929, and was appointed Judge of the Appeal Division. In December, 1932, disagreeing with the Government's financial policy, he resigned his judgeship to form a Central Party, but it met with little success.

ROSE-INNES, SIR JAMES (born 1855). Ex-Chief Justice of the Union. Educated at Bedford and Cape University, he entered the Cape Parliament in 1884 as member of Victoria East, and was returned for the Cape Division in 1888. Appointed Attorney-General in the Rhodes Ministry of 1890, but resigned in 1893. He became Attorney-General for Cape Colony in 1900, was appointed Chief Justice for the Transvaal in 1902, Senior Puisne Judge of the Appellate Division of the Supreme Court of South Africa in 1910, and Chief Justice of the Union in 1914, from which he resigned in 1927.

SAUER, JACOBUS WILHELMUS (1850-1913). A prominent Cape statesman. From 1881 to 1884 he was Secretary for Native Affairs. In later years he became a close associate of Merriman, and in 1895 he seriously challenged the growing power of Rhodes. In 1898 he became a member of Schreiner's ministry, and in 1901 he and Merriman made a fruitless journey to England to petition for a South African Federation. He was defeated in the 1904 election, but soon returned to politics, and when Botha, in 1910, formed his Union Government, Sauer became Minister of Railways, but resigned in 1912.

SCHREINER, OLIVE (1862-1920). Author-ess. Born in Basutoland, where her father was a missionary. Created a sensation in the world of letters with her novel, *The Story of a South African Farm* in 1883, published under the pseudonym of Ralph Iron. In 1891 she wrote *Dreams*, followed by *Trooper Peter Halkett* in 1897, and *Women and Labour* in 1911, the latter an expression of her strong feminist ideals. She also took a keen interest in politics, her

sympathies lying with Boer independence. In 1894 she married S. C. Cronwright, who adopted the name of Cronwright-Schreiner.

SCHREINER, WILLIAM PHILIP (1857-1919). Prime Minister of the Cape from 1898 to 1900 and High Commissioner for the Union in London from 1914 to 1919. He studied law at Cape Town, Cambridge, and London; was called to the Bar in 1882, and for many years was leader at the Cape Bar. In 1887 he became Attorney-General under Rhodes, and became Prime Minister on the resignation of Sprigg in 1898. At that time Schreiner was leader of the Bondsmen in Parliament. During the 1908 negotiations on the Union, he was in favour of federation. He defended Dinizulu, son of Cetewayo, who in 1908 was sentenced to four years' imprisonment on a charge of harbouring rebels.

SELBORNE, 2ND EARL OF; WILLIAM WALDEGRAVE PALMER (born 1859). High Commissioner from 1905 to 1910. Educated at Winchester and Oxford. Member of the British House of Commons from 1885 to 1906, and Under-Secretary for Colonies from 1895-1900. In 1905 he succeeded Lord Milner as High Commissioner for South Africa and Governor of the Transvaal and Orange River Colony. He was asked, in 1906, by the Cape Parliament, to review the prospect of Union, and his memorandum of the following year paved the way to the Inter-Colonial Conference and the National Convention which led to Union.

SHEPSTONE, SIR THEOPHILUS (1817-1893). Son of the Rev. William Shepstone, who emigrated to the Cape Colony when Theophilus was only three years of age. Shepstone was on the staff of Sir Benjamin D'Urban at the end of the 1835 Kaffir War, and in 1839 was appointed British Resident among the Kaffir Tribes. In 1856 he was made Secretary for Native Affairs in the Natal Government. He was sent by the British Government as Commissioner with very large powers, and in 1877, on the instructions of Lord Carnarvon, he issued a proclamation annexing the territory of Transvaal.

SMARTT, SIR THOMAS (1858-1929). A well-known Cape statesman. After having qualified as a doctor in Ireland in 1878, Smartt journeyed to the Cape as a ship's surgeon and decided to settle there. He became a close friend of Rhodes and Jameson. He entered the Cape Legislative Assembly in 1894, became Colonial Secretary in 1898, Commissioner of Public Works from 1900 to 1902, and Minister of Railways from 1904 to 1908. On Jameson's retirement in 1912, he became leader of the South African Unionist Party, then in opposition to General Botha. When Smuts formed a

Coalition Government in 1921, Smartt became Minister of Agriculture for three years.

SMITH, SIR HARRY (1787-1860). His Christian names were, in point of fact, Henry George Wakelyn. He served with distinction in the Peninsular Campaign, and when in 1828 he was ordered to the Cape, he held high rank. During the Kaffir War of 1834-36 he commanded a Division, but his most famous deed of that period was his ride from Cape Town to Grahamstown, a distance of 600 miles, in less than six days. He was appointed Governor of a new province, but his administration did not meet with favour as he was recalled. For a time he served in India, but in 1847 he returned to South Africa as Governor of Cape Colony and High Commissioner. Failing to stop the constant emigration from Natal he declared the whole of the area between the Orange and Vaal Rivers to be British territory, and named it the Orange River Sovereignty. He abolished the Treaty States of Griqualand and Basutoland, which led to a conflict with the Boers. Smith, on 29th August, 1848, defeated Pretorius who was obliged to recross the Vaal. He fought successful campaigns against the Kaffirs and was again recalled, the Home Government being alarmed by the duration and cost of the war against the Kaffirs.

SMUTS, JAN CHRISTIAN. Soldier and statesman. See article, Vol. VIII.

SOLOMON, SIR RICHARD (1850-1913). A celebrated South African lawyer. He first became prominent when he endeavoured, as Attorney-General of the Schreiner Government, in 1898, to bring in a bill to punish rebellion. From 1898 to 1900 he was Attorney-General in Cape Colony, and in 1901 he was legal adviser to Milner. Then he became Attorney-General for the Transvaal. He was appointed High Commissioner for the Union in 1910.

SOMERSET, LORD CHARLES HENRY (1767-1831). Governor of Cape Colony from 1814 to 1826. In 1815 he quelled with unexampled severity a rising of the Dutch farmers due to his employment of coloured troops to arrest white people. He also had to engage in hostilities with the Kaffirs who raided settlers. On the constructive side, Somerset did splendid work in settling 5000 British emigrants who were sent out in 1820 and 1821, at a cost of £50,000, to alleviate distress in Britain due to the Napoleonic wars. He also improved the currency and re-modelled the courts on the British system. In 1826 he resigned his office in order to escape impeachment on a variety of charges alleging autocratic actions.

SOUTH AFRICAN WARS. See article, Vol. VIII.

SOUTH-WEST AFRICA. See article, Vol. VIII.

SPORTS AND PASTIMES. Sport plays almost as important a role in South African life as it does in Great Britain. This applies both to South Africans of Dutch stock, who form the majority of the population, and those of British origin. South Africa has no game or pastime which could be called national in origin. It is the imported game of Rugby which has now become the South

Davis Cup competition, getting as far as the semi-finals in the European zone in 1935.

Apart from sports, motoring may well be described as the most popular pastime in South Africa, a statement which is borne out by the fact that there is a motor car for every nine head of population.

Rugby. The style of the South African game bears a closer resemblance to British than to New Zealand forms. Indeed, one of the features of South African forward play is its traditional style and a discouragement of "wing" forward play, though even



SOUTH AFRICA VERSUS AUSTRALIA AT JOHANNESBURG.

South Africa continues to show progress at cricket and in 1935 beat England in a series of Tests

Photo: South African Railways

Africans' national game, and in it they excel most. The Springboks, as South African national teams are called, are serious contenders for the primacy of International Rugby.

Soccer, as Association football is called in South Africa, is increasing in popularity, though it has not the same appeal to South Africans as Rugby. Hockey and golf are as popular in South Africa as elsewhere. The first ice rink was introduced to South Africa in the Empire Exhibition, Johannesburg, 1936-37. During the course of the Exhibition, overseas ice hockey teams were introduced to South Africa, and the game caught the popular imagination to such an extent that there is now an ice hockey league in existence on the Witwatersrand. Baseball is gaining increased attention, particularly along the Witwatersrand, where there are many Americans amongst mining engineers and technical staff.

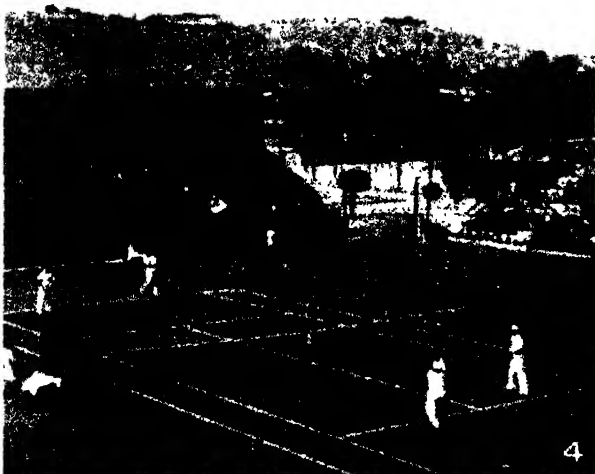
Tennis is played throughout the country, and South Africa competes regularly in the

South African test teams are unable at times to check the tendency to obstruct near the scrummage.

A recent exception, however, is the Springbok method of "packing" the scrummage, 3-4-1, a formation which has brought great success to Springbok teams. It suits the abnormal strength and physical power of the South African forwards.

A characteristic of South African play is the success with which their teams merge individual effort into a corporate whole. They are particularly strong in forward and half-back play. They have produced some remarkable kickers, amongst whom Morkel and "Benny" Osler stand out, but it must be confessed that brilliant kicking sometimes tends to make South African play monotonous, even though it leads to victory.

Writing in 1931, E. H. D. Sewell, the English international, declared that he "had never seen the equal of the 1912-13 South African pack" in the 126 international matches he had witnessed.



1. Trout fishing in the Hex River valley. Poor in indigenous species the rivers of the Union provide ideal breeding grounds for the trout which have been introduced. 2. Racecourse at Durban. Everywhere in the Union horse-racing, which is of a high standard, attracts enthusiastic crowds. 3. Surf-riding on the Cape coast, where the great rollers make conditions perfect. 4. Centre court at Ellis Park, Johannesburg. South African teams provide serious opposition even to the strongest lawn tennis nations. 5. Yachting in Durban Bay. 6. On the golf course at Potchefstroom. Golf is immensely popular in the Union and the best South African players have acquitted themselves well in tournaments, both amateur and professional, in all parts of the world. 7. Bowling at Humewood, Port Elizabeth.

Photos: South African Railways

Cricket. Since 1889, 59 test matches have been played between England and South Africa, of which 28 were won by England and 12 by South Africa. In this game South Africans are not in the same class as British or Australian players, and it is only recently that South Africa has changed from matting to turf wickets.

In the 1935 tests, South Africa surprised the majority of the experts, both in the British Isles and in their own country. The Springboks, captained by H. F. Wade, played 39 games, winning 17 and losing only 2 out of the 31 ranking as first class games. This eleven won a test match for the first time in England, and by that victory, at Lords, beat England in the rubber. Five tests were played and the South Africans won 1 and drew 4.

Shooting. Game is protected in the Union against wanton destruction by severe and detailed legislation. Some areas are entirely closed to hunting, chief amongst them the Kruger National Park, the "Zoo" of South Africa, which is the size of Belgium, and the largest game sanctuary in the world.

Certain species are proclaimed as "Royal Game" either throughout the whole country or in certain districts and may not be shot under any circumstances. As for the rest, game is divided into "big game" and "small game" and licence fees have to be paid to the State before such game may be hunted. Farmers have certain privileges on their own land, including the right to refuse a licence-holder permission to shoot.

Sport is good and great demands are made on the initiative of the hunter since dogs or beaters are not used.

In the winter months everyone who can afford it treks into the game areas for a fortnight's or a month's camping. Meat which cannot be consumed on the spot is sun-dried, in which condition it will last for more than a year. This "biltong" is a favourite dainty on the South African table.

Fishing. The rivers of South Africa are less rich in indigenous species of fish than those of tropical Africa, and this fact has no doubt been favourable to the remarkable developments which have attended the introduction of trout to South Africa. The trout have less competition to face than if the rivers had been well stocked with native fish, and in consequence have been thoroughly established, so that the country now ranks as one of the trout fishing parts of the world. The Government Inland Fisheries Department maintains hatcheries in various parts of the country. Successful distributions of fry have been made all over the Union rivers. In East Griqualand "rainbow" trout up to 4-5 lb. have been taken, and in

Natal all the rivers offer good sport, mainly in "rainbows" up to 4 lb. The season lasts from September to March.

Imported carp have grown amazingly in many places and are becoming a nuisance.

The introduction of large-mouthed black bass has been the latest development.

Big game fishing in South African seas will probably develop more and more. The Natal coast and many places in the Cape Province have lately been yielding sharks of 500-800 lb. Fishing is chiefly carried on from piers, rocks, or beach, with simple tackle: a natural bamboo rod in one piece, 12-14 ft., well seasoned, a big float formed out of a kerosene tin (which helps to play the fish) and a 7 in. or 8 in. wooden reel of the "Scarborough" type. In Cape waters various fish, red and white Steenbras, up to 45 lb., Kabeljauw's, 35 lb., and "Cape Salmon" up to 30 lb. are caught.

Golf. Golf is omnipresent in South Africa, and on a census of players might well prove to be numerically the most popular game in the country. There are numerous golf courses, private and municipal, throughout the country, and some of them can compare with the best abroad. In the beginnings of South African golf, professionals were imported from overseas, but their number is decreasing as the South African is becoming more expert at the game. South African representatives have, indeed, acquitted themselves well in numerous international matches.

Athletics. Although athletics still take a prominent place in school sports, the quality of South African athleticism does not seem to have improved in late years, if Olympic games are taken as a test. In the British Universities South Africans have, in the past, been prominent amongst their sporting representatives, and at one time there were several world records to the credit of South Africa. These, however, have since all passed to better performers.

SPRIGG, RT. HON. SIR J. GORDON (1830-1913). Four times Prime Minister of Cape Colony, the periods being 1878-81, 1886-90, 1896-98, and 1900-1904. He arrived in South Africa in 1858, and for ten years farmed near King William's Town. In 1869 he entered the Cape House of Assembly and remained a member until 1904. Altogether he sat on the Treasury benches for eighteen years. He had always a considerable personal following in Cape politics, and in 1900 he owed his re-election to the support of the Afrikaner Bond, who refused to countenance Schreiner any longer. His political eclipse came about in 1904 when at the election in that year Sprigg and the majority of his ministers were defeated and Jameson

became Prime Minister. He returned to politics on 1907, but retired after the formation of the Union.

SPRINGBOK. See article, Vol. VIII.

STEINBOK. See article, Vol. VIII.

STEYN, MARTINUS THEUNIS (1857-1916). Last President of the Orange Free State. He was called to the Bar in England in 1888, and after practising at Bloemfontein became second puisne judge of the High Court. In 1889 he became Attorney-General and Chief Justice. When F. W. Reitz resigned from the Presidency of the Free State in 1895, Steyn was elected by an overwhelming majority as the candidate of the Dutch Party. At the end of the Boer War, he preferred to resign his Presidency rather than to yield to the British. Later Steyn, with Hertzog, formed the Die Oranje Unie in the Orange River Colony with the object of working for self-government. On the formation of the Union in 1910, ill-health prevented him from accepting the Premiership. In 1914 he attempted to prevent the De Wet-Beyers rebellion.

STUTTAFORD, RICHARD (born 1870). Minister without Portfolio, and head of one of the great retail businesses of South Africa. He has been President of the Cape Town Chamber of Commerce for two years, and also President of the Associated Chambers of Commerce for South Africa for a further two years. He entered politics in 1924, and in 1933 he was included in the Hertzog Government.

TE WATER, C. (born 1887). High Commissioner for the Union in London, he was

appointed in September, 1929, succeeding Mr. Eric Louw. He was educated at Bedford and Cambridge, and upon qualifying for the legal profession, was called to the Bar at Pretoria. He won Pretoria Central from the South African Party in 1924, but was defeated at the following election.

TE WATER, DR. THOMAS (1857-1926). A well-known statesman.

Educated at Graaff-Reinet, Cambridge, and Edinburgh, he returned to Graaff-Reinet to practise in the medical profession. He entered politics and became a member of the House of Assembly, as a representative of the

Afrikaner Party. Eventually he was one of the party whips. In 1896 he joined the Sprigg ministry as Colonial Secretary.

TRADE. It may well be said that the commercial history of South Africa begins with a ship's chandlery at Table Bay. It was for the service of India-bound ships that the Dutch East India Company in 1652 established their first settlement there.

Throughout those early years, the re-victualling of ships constituted the sole commercial activities of the Cape. The Company maintained its trading monopoly, limited to the supply of meat and vegetables, by its scanty band of officials, and, as time went on, by the small community of retired officials, Huguenot refugees and other settlers.

It was not, indeed, until the latter part of the eighteenth century that a genuine export trade began to take shape, with regular shipments of Cape grain to Batavia. Even then, private trading was either forbidden or discouraged, the settlers' produce being handled by the official commercial corporation.

Arms, clothing materials, occasional consignments of implements and luxuries, mainly for official use—these were the principal imports.

In 1815, when British possession of the Cape was finally ratified by purchase, the white population had reached a total of 26,700, with an inherited industrial system based on slave labour. There were, in fact, some 29,300 slaves, while a free coloured population of 17,650 Hottentots also existed. The Bantu wave, which later produced such an important native market, had not yet swept so far south.

The total imports of merchandise in satisfaction of the needs of the mixed community were valued at about £100,000 per year, and the exports stood at approximately £60,000. In other words, the economic position was unsound, and the trade balance heavily on the wrong side.

With the inauguration of British rule there was no diminution of political unrest, but trade was given a greater freedom, and mercantile organization found full scope. It was in 1815, indeed, that the first Cape mail service was established by the British Government.

About that time, also, the trading system of the colony began to take definite shape. Coastal trading stations at such places as Port Elizabeth and East London grew into ports serving both the import and export trades of ever widening districts; at Port Natal, the settlement of a small body of Englishmen was the preliminary to clashes with the Voortrekkers under Pretorius



C. TE WATER
Photo. Central

and the Zulus under Dingaan, with the final creation of the colony of Natal; while the famous Boer treks, particularly those between 1834 and 1840, carried white colonization as far over the central plateau of the continent as the northern parts of the Transvaal, and west and east from the Kalahari to the Drakensberg.

No less potent in its effects than the great Boer trek movement was what may be called the commercial trek which followed on its heels. At Capetown and the other coastal centres, retail stores in increasing numbers began to develop as wholesale clearing houses for both incoming and outgoing merchandise, and from that time until the present day South African merchant firms have maintained this dual import and export interest, an interest which is inherent in the economic structure of the market. In every one of the small dorps or villages was to be found

a general store stocking everything "from a needle to a plough." Travelling from farm to farm were also the smaller types of peripatetic traders who carried their stocks in ox wagons.

Both stationary and travelling storekeepers were dependent largely on liberal credits from their wholesale connections whose headquarters were at the coast, a condition of things arising out of the barter system which prevailed generally. South Africa was entirely agricultural until comparatively late in the nineteenth century, and while the farmers required supplies of implements, domestic goods, and clothing all the year round, they were only able to make settlements after the annual disposal of their crops and livestock. Indeed, their produce was in many cases their only currency. Moreover, they found it convenient to place their produce in the hands of the storekeepers for disposal to the wholesale firms. The former thus served as both the collecting and distributing agents for the latter, and both retailer and wholesaler made generous double profits from this two-way trade in good times, although, of

course, they were also subject to double losses in bad years.

Chequered by pioneer population movements, native wars, droughts and plagues, with a primitive and scattered agricultural industry as its sole basis, the trade of South Africa thus struggled through its first important stage during two-thirds of the last century. Numerous merchant houses whose names are to-day household words, such as the Mosenthals and the Dyers, arose from small beginnings in that period. At first there were only the most elementary financial facilities

available, and, in the absence of banks, a few of the leading merchant firms actually supplied an unofficial currency in the shape of notes drawn on themselves.

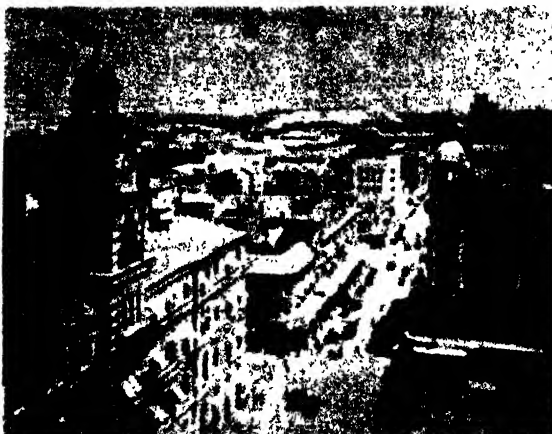
Thanks mainly to those earlier merchants, the economic prosperity of the country was slowly established. Merino sheep were acclimatized, and wool quickly be-

came the principal export. Ostrich feathers, wines, and hides also became important products for shipments to England. Later the Angora goat was introduced, and South Africa gained another important export industry in the shape of mohair production. The public revenues rose and made it possible to finance harbour improvements and to construct railways.

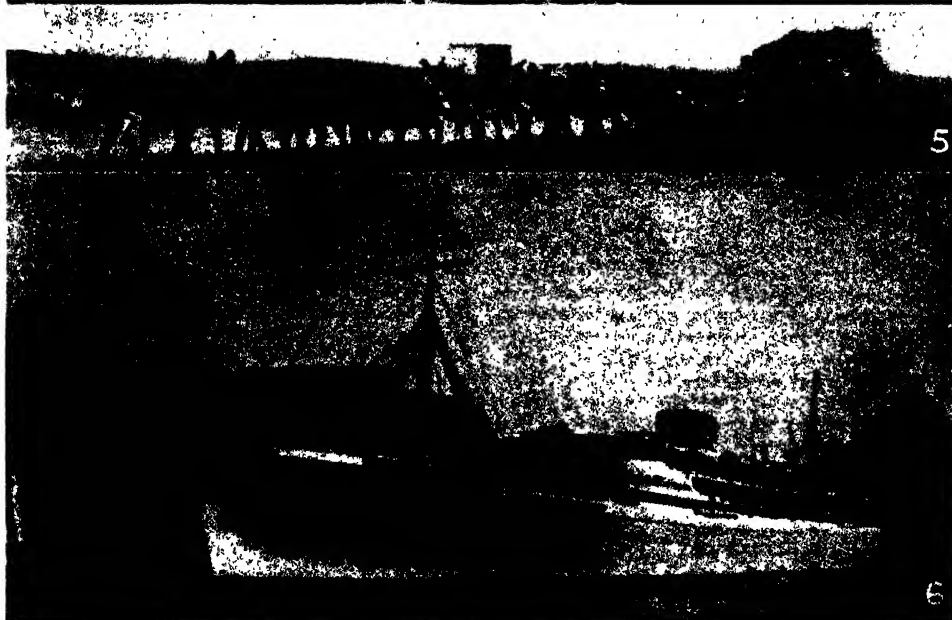
In 1853, the first steam mail service was started by the Union Line from England to Capetown with vessels of 500 tons and under, and the company were awarded a definite mail contract by the Cape Government in 1857, the stipulated time for the voyage being 42 days, which was reduced to 38 days in 1868. The Castle Line was also started by the late Sir Donald Currie in 1872, the mail contract being eventually divided between the two concerns.

Thus, solid but unsensational progress was made, and trade, both internal and external, grew to substantial volume.

Then in the 'seventies came the discovery of diamonds, with all its remarkable consequences. Economic expansion went forward by leaps and bounds, and when, in 1886, the



JOHANNESBURG, LOOKING SOUTH FROM BARBICAN HOUSE
© Fox



SOUTH AFRICAN TRADE

1. Packing fruit. In 1900, 309 tons of fruit were exported. To-day more than 200,000 tons are exported annually. 2. Sorting diamonds according to colour, purity and size. It has been estimated that the value of diamonds produced since 1930 amounts to over £330,000,000. 3. Loading a ship with goods for export. In 1934, goods—including bunker coal—to the amount of 2,178,776 tons were loaded at docks in South Africa. 4. Grading and packing citrus fruits. Government regulation and inspection ensures a high and uniform standard. 5. Travelling trader with his team of sixteen donkeys. Such traders still meet a real need in the more remote districts in the Transvaal. 6. The Union Castle Liner *Stirling Castle* leaving Cape Town. In 1935 over 41,000 persons came by ship to the Union, 10,000 of whom were tourists.

Photos: South African Railways; Topical; Trade Commissioner for South Africa; Union Castle Line

enormous wealth of the Rand's golden reef was realized, the added impetus completely transformed conditions. Large populations appeared and took root. New and important markets were created for farm produce; railway construction was pushed forward until, in the 'nineties, the main line ran from the Cape to the Transvaal frontier; railways had been built northwards from Port Elizabeth and East London; and the line from Delagoa Bay to the Transvaal was completed.

The change in character of the country's trade was naturally extremely marked.

British colonies. In 1895 came his ill-advised attempt to close the drifts or passes to the Transvaal through which Cape merchants were using road transport to avoid the prohibitive rates levied over the 40 miles of line owned by the Netherlands Railway Company, and the Boer War which started four years later was nearly precipitated then. Disastrous as were the political consequences caused by the rise of the gold industry, seen in true perspective they were part of the phenomena connected with the invincible tendency toward the commercial



AN EXAMPLE OF OX WAGON TRANSPORT IN THE EARLY DAYS

Photo - Fox

To the normal exports were added the great values of the diamond and gold outputs, and the trade balance no longer depended on the seasonal fortunes of agricultural and pastoral activities. Imports also widened remarkably in variety and volume. Not only were large quantities of domestic and personal goods required for the new and prosperous industrial centres, the populations of which were recruited largely from Europe, but an unprecedented impetus was given to the earning power of native mine workers, who carried back to their kraals goods and tastes acquired in the cities of Kimberley and Johannesburg. The machinery and stores requirements of the mines added millions sterling to the import trade.

The rich prizes at stake produced their dangerous political reactions. President Kruger was not in sympathy with these developments, and he refused to co-operate in the necessary transport extensions. He did eventually agree to carrying the railway lines from the south as far as the Rand, but he was not prepared to allow the lion's share of the traffic to fall into the hands of the

unification of South Africa which has since been realized.

The Boer War of 1899-1902, by making possible commercial and economic unification, closed one chapter and opened another of greater potentialities.

The earliest developments were spasmodic and extravagant. There was immediately a great trade boom. So eager were British manufacturers to get into the market, that scores of totally unqualified commission representatives were able to go out from England each carrying fifty or more commissions. The ranks of the mercantile community in South Africa also expanded beyond all justification, and too many firms fell into the error of adopting an over-ambitious bricks-and-mortar policy, being left, when the inevitable reaction set in, with heavy financial commitments and frozen assets.

That phase soon passed and, happily, left much less mercantile wreckage than might have been expected, though a few failures of considerable dimensions occurred. Meanwhile, the process of national unification

continued, helped rather than hindered by the incidence of the World War. Among the developments of the period between 1902 and 1920 were a statesmanlike extension and consolidation of the railways under Government control throughout the four provinces of the Union; an adjustment of the volume of traffic on all the main routes from the coast to the Transvaal, including that through Portuguese East Africa from Lourenço Marques; a marked advance in the equipment of the principal harbours, notably at Capetown and Natal, with a great expansion of the latter's coal-bunkering trade; a successful and sustained effort to build an important trade in fresh fruit with the United Kingdom; and the appointment of a Commercial Agent in London by Natal, and of a Trade Commissioner by the Cape Government, followed after 1910 by the appointment of a Trade Commissioner for the entire Union.

Among the disadvantages of the years immediately following the Boer War were several disturbing shipping freight wars. The Union and Castle Lines had combined in 1900, and had taken the lead in establishing a Steam Conference for the purpose of stabilizing rates of freight by limiting competition, this being accomplished in consultation with a representative of the South African Merchant's Committee in London, now known as the South African Trade Association.

Following Union in 1910, a mild form of economic nationalism made itself felt in South Africa. Secondary manufacturing industries were brought into being, and an insistent demand grew for their protection, with a considerable effect on the fiscal policy of the country. Originally, a moderate customs tariff was instituted mainly for the purpose of providing revenue, but this developed definitely into a protective tariff after the Hertzog Administration came into power in 1925. In 1903 the four states which now comprise the Union joined with Southern Rhodesia in signing a Customs Convention under which the principle of Imperial Preference was recognized. This was extended to Canada in 1904, to Australia in 1906, and to New Zealand in 1907. Apart from various minor modifications, matters remained unchanged in principle until 1925.

In practice, the protective tariff then introduced has not proved seriously obstructive to the import trade as a whole, and some important secondary industries have been enabled to reach a profit-earning condition. Further, a considerable number of British manufacturing concerns, and some American, have been induced to establish factories in the Union. In conjunction with the adoption of a protective policy, the

Government also set up a Board of Trade and Shipping, with power to amend the tariff in the interests of local industries without recourse to Parliament. Between 1930 and 1932 protection for clothing, footwear, and some other commodities was increased, but under the Ottawa Agreement at the same period further advantages were given to Great Britain, and under the present three-column tariff various useful reductions of duties have been made.

The financing of South African trade has also experienced important developments during the past twenty-five years. Not only was the South African Reserve Bank created in 1920 to operate under government control with the object of securing the credit of the State, but there has been a steady process of amalgamation among the commercial banks. See **BANKING AND FINANCE**.

The trade and economics generally of South Africa are naturally closely linked with gold. Prior to December, 1932, the Hertzog Government made strenuous efforts to remain on the gold standard, fearing a world depreciation of the country's mineral mainstay. With trade declining and money tight, however, it became necessary to abandon the standard, and with excellent results. The devaluation of South African currency by 25 per cent resulted in an immediate addition to the mining industry's income of no less than £15,000,000, or at least £12,000,000 net, and this has led to a substantial extension of the industry's activities, with satisfactory results for trade. In fact, imports and exports have made good progress since, reaching totals respectively of £86,299,360 (including government stores and specie) and £111,153,856 per annum.

The country's exports, helped by an energetic Trade Commissioner Service, have made substantial advances. With improved world markets and prices, such staples as wool, mohair, fruit, hides and skins, maize, wines, asbestos, wattle bark and extract, coal, eggs and dairy produce, etc., have found increased overseas sales. Great Britain is the Union's outstanding customer, taking 43 per cent of the exported produce and practically all the gold output. France is the principal foreign customer, taking 10.7 per cent of the produce exclusive of gold; Germany and Japan follow with 8.8 per cent; then Belgium (6.7 per cent), the U.S.A. (3.9 per cent); Holland (3.2 per cent); and Italy (1.5 per cent). In pursuance of its policy of extending its export markets, the Union Government has appointed commercial representatives not only in London, but in the U.S.A. and in many of the leading European centres. It has also entered into

Commercial Treaties with a number of foreign States. Such treaties are mainly designed to secure most-favoured-nation treatment for Union produce. The treaty with Germany has more importance than some in view of the amount of Union wool which that country uses, and of the special arrangements required for obtaining payment under methods akin to a system of barter.

The Union's import trade has also expanded during recent years. Britain is by a large margin the principal supplier, having contributed no less than £36,631,568, or 45·7 per cent, of the total in 1936, while the British Empire as a whole was responsible for 54·1 per cent. The U.S.A. comes next with £15,923,894, or 19·9 per cent; followed by Germany, £4,304,121 (5·4 per cent); Japan, £3,067,745 (3·8 per cent); Belgium, £2,123,159 (2·6 per cent); and Sweden £1,408,143 (1·8 per cent). Moreover, during the first half of 1936 the Union achieved the position of Great Britain's largest overseas customer.

In view of its relatively small white population—little more than 2,000,000—South Africa's buying power is remarkable, the *per capita* rate being exceptionally high and, moreover, it has been sustained at that high level over a period of many years, as the following figures show—

Year	Per Capita of Total Population						Per Capita of European population					
	Imports			Exports			Imports and Exports			Imports and Exports		
	£	s	d	£	s	d	£	s	d	£	s	d
1906	5	1	9	3	3	9	13	5	6	61	17	4
1925	9	3	5	12	1	6	21	4	11	96	2	2
1934	7	16	5	9	13	9	17	10	2	77	11	3
1936	9	0	0	11	11	1	20	11	1	98	11	0

The native and other coloured population of the Union is responsible for a varied assortment of imported cheap goods, as well as buying considerable quantities of local productions. While the kraal trade in "Kaffir truck" remains much the same year after year, increasing numbers of natives come under urban influences or find industrial employment, and their purchases naturally widen in range and character.

No survey of South African trade would be complete without reference to the rise of the department store and the rapid increase in shops run on the "chain" system, both indicative of the trend in retail trading during recent years. A modern factor

worthy of mention is the strenuous and successful effort which is being made to develop the tourist trade. The total number of visitors for 1936 is estimated at about 30,000, and their expenditure in the Union is calculated at £3,000,000.

UNION OF SOUTH AFRICA. See article, Vol. VIII.

UYS, PIETER LAVRAS. A celebrated Boer Commandant. One of the large parties that took part in the Great Trek of 1837 was led by the patriarchal Uys from the Uitenhage District. Uys repudiated the constitution drawn up by Retief, and attempted to found a new settlement. Associated with him was Potgieter. Later, when Retief was massacred by Dingaan, they led their forces against the Zulus, but Uys was trapped and mortally wounded.

VAALE RIVER. A river of South Africa it rises in the Drakensberg Range in the Transvaal, near Voorstade, and flows south-west until it empties into the Orange River nearly 880 miles from its source. Near Standerton, on the border of the Orange Free State, it is joined by the Klip. The Vaal then forms the very irregular boundary between the Transvaal and the Orange Free State until it enters Cape Province. Twenty-five miles after leaving Barkly West it is joined by the Harts River and 9 miles before Douglas it unites with the Modder. A few miles farther on it is merged with the Orange River.

VAN DER GRAAF, COLONEL. He was Governor of the Cape from 1785-1791. When he was appointed Governor by the Dutch East Company, he found grave dissatisfaction in the colony and immediately brought about improvements. He set up a Commission of the High Court, on which the burghers were represented, to maintain roads, regulate prices, facilitate trade, etc. In addition, he fortified and provided military guards for trading stations, the bill for fortifications increasing from £25,000 to £120,000 a year. Accordingly, he was recalled by the Company for extravagance.

VAN NIEKERK, CHRISTIAAN ANDRIES (born 1874). Senator. He was educated at Wellington and Stellenbosch. He was Commandant at Kroonstad during the Boer War and acted as interpreter for Generals De Wet and Elliott at the general surrender. In 1907 he was elected member of the Legislative Assembly for Kroonstad West; he sat in the Union Parliament until 1924, when he was elected a Senator. In 1930 he became President of the Senate.

VAN RIEBECK, JAN (1618-1687), known in history as "the man who founded South Africa." He started life as a surgeon, but entered the service of the Dutch East India



THE BRIDGE OF THE FOURTEEN STREAMS ON THE VAAL RIVER
Photo South African Railways

Company After leaving the Company, somewhat in disgrace, he was given a chance to rehabilitate himself by leading an expedition to the Cape in 1652. For ten years he laboured arduously. His main task was to make the Cape a suitable port of call for Dutch ships sailing to and from the Indies, but he saw the possibilities of a policy of colonization. His requests for labour were repeatedly snubbed and he was compelled to adopt slavery.

VAN DER STEL, SIMON (died 1712). Appointed Commander of the Dutch East India Company's settlement at the Cape in 1679, and made Governor in 1683. He established settlements at Stellenbosch, Drakenstein, and other places, and sent exploratory expeditions into the country as far as the Orange River.

VAN DER STEL, WILHELM ADRIAAN He was the son of Simon Van der Stel, whom he succeeded as Governor of the Dutch East Company's settlements. He endeavoured to amass wealth for himself on his own land. He erected extensive buildings, planted nearly 2,500,000 vines, laid out groves, orchards and corn lands. He kept between 600 and 800 breeding cattle, upwards of 10,000 sheep. He was recalled to Amsterdam, and accused of misconduct and corrupt practises.

WALVIS BAY. A port on the south-west African coast, 735 miles by sea from Cape Town. It was British even before the World War. Since 1922 it has been administered as an integral part of South-West Africa. Whilst the surrounding country was German the port remained undeveloped, but after

the war it was rapidly developed. There is a cold storage and refrigerating plant, and a concrete wharf 1500 ft long with an approach channel 29 ft. deep enabling vessels to come alongside for discharge and to take on passengers and cargo. In 1935, 32,868 tons of cargo were landed and 22,227 tons shipped at Walvis Bay.

WART-HOG. See article, Vol VIII

WERNHER, SIR JULIUS CHARLES (1850-1912). Financier and life-long friend and partner of Alfred Beit. Wernher was born at Darmstadt, and for a period worked as a clerk in Frankfort. In 1871 he was sent to Kimberley to buy diamonds for the French firm of Jules Porges et Cie. Eventually he became a partner in the firm, and in 1888 joined the De Beers Corporation. Later he threw in his lot with Beit and formed the well-known firm of Wernher, Beit & Co. In his later years he became famous for his generous gifts to education and medical research.

WESSELS, SIR JOHANNES WILHELMUS (born 1862). Educated at the Cape University and Cambridge. He joined the Cape Bar in 1886 and the Transvaal Bar a year later. During 1900-01 he was legal adviser to Lord Roberts, and in 1902 he was appointed from Cape Town to the new Transvaal bench at Pretoria. In 1920 Wessels became the Judge President of the Transvaal Provincial Division, and in 1923 he was made Judge of the Appellate Division of the Supreme Court of South Africa. In 1932 he became Chief Justice of the Union.

ZEBRA. See article, Vol VIII.

ZULULAND. See article, Vol VIII.

INDIA SECTION

AFRIDI. See article, Vol. I.

AGA KHAN, THE. See article, Vol. I.

AGRICULTURE AND FARMING. Indian agriculture is impressive by reason of the stupendous scale on which the operations are conducted, the enormous area over which they extend, and the vast population which the industry subserves. The area actually cultivated in any one year is round about 300,000,000 acres, that is, an area which is equal to that of the aggregate extent of France, Germany, and Italy put together. Of the 353,000,000 who form the population of the country, nearly 233,000,000, one-eighth of the human race, are directly engaged in or are dependent on agriculture for a living. India is the world's largest producer of rice, sugar, and oil-seeds, the second largest producer of cotton and tea, she enjoys a monopoly of the production of jute, she is a considerable grower of wheat, though normally 90 per cent of what is produced is consumed in the country itself and only the balance is available for export, and in the production of food grains other than rice and wheat she shares with China the pride of ranking first among the nations. In the matter of quantity of farm live-stock India is equally pre-eminent. The latest census of the animal population gave the amazing total of 560, 00,000, double that of the United States of America. The annual value of the agricultural produce of the country has been estimated at £1,000,000,000 sterling, and that of its annual products at £1,400,000,000. The greater part of the volume of India's exports is contributed by agricultural products, and the tax on land forms the backbone of the revenue of the provincial governments.

Stupendous as these figures are in the mass, they have to be analysed in detail before we obtain an exact picture of the agricultural conditions of the country. The vast agricultural population is scattered amongst nearly 697,000 villages, India being a land of small places, only 11 per cent of the entire population living in urban areas, as against 80 per cent in England and Wales. It is predominantly a country of small holdings, about 60 per cent of holdings being in size below 5 acres, and this fact has to be borne in mind when questions of rural economics or of agricultural improvements are under consideration. Accurate figures of the average area under individual cultivation are not available except in the

province of the Punjab, where it has been ascertained that 22.5 per cent of the cultivators cultivate areas of 1 acre or less; a further 15.4 per cent cultivate between 1 and 2½ acres; 17.9 per cent between 2½ and 5 acres, and 20.5 between 5 and 10 acres. It is believed that the province of Bombay would show a similar result and all the other provinces of India much smaller average areas per cultivator. Small as they are, the holdings are not continuous. There is excessive fragmentation in India, and attempts made at consolidation of holdings have not met with appreciable success except in one province.

It is not sufficiently realized in Europe how extremely poor the Indian cultivator is. The typical agriculturist lives in a poorly furnished cottage with a thatched roof, the household pots and pans are of the simplest kind, the food is poor in quality and often deficient in quantity. The few acres he possesses are cultivated with the help of a pair of bullocks and of his wife and children, and in the old days his only recreations were attendance at a wedding or a temple festival, or the walk to the weekly fair which served the group of villages in which his own hamlet was comprised. The villager's lot has in recent years been brightened by the advent of the motor-bus which has invaded even the remotest parts of India and given him cheap and quick access to the nearest township, where he can go to a rough-and-ready theatre or a picture house and enjoy the unwonted luxury of a cup of tea or coffee.

Whether the economic condition of the cultivating classes has improved or is improving is a matter on which there has been controversy. It seems consonant with reason that the development of irrigation on a vast scale in the Punjab and to a smaller extent in the other provinces, the opening up of the country by railways and roads, the development of overseas markets for agricultural products, the evolution of new and improved varieties of crops and the other improvements due to the labours of the new agricultural departments should have affected the position of the agriculturist for the better. Even the most pessimistic observer of Indian agricultural life cannot deny that since the beginning of the present century the gaunt spectre of famine, with its multitude of deaths by starvation, has been banished from the

country. Not that the smaller farmer with his 5 acres of unirrigated land or less, on which he raises a crop of millet or pulse, has built up a reserve of resources to sustain him through a rainless season. At the moment this article is being written, the south-west monsoon on which the western tract of India depends has vanished from the Deccan districts of Bombay, which enjoy the unenviable notoriety of having had more famines in the last 150 years than any other part of India, and the provincial government has had to organize measures to save the inhabitants of the countryside and their working cattle from

It would not, however, be presenting an accurate picture to say that the only striking improvement in the present century in the economic position of the Indian ryot has been the banishment of famine with its attendant terrors from the countryside, amounting to a permanent abolition in the case of irrigated tracts, and a considerable mitigation of it in the tracts of precarious rainfall. No observer of Indian rural conditions in the last thirty years, could have failed to notice the distinct rise in the standard of living in those agricultural areas where, owing to the development of external markets or internal industries, a



HOEING TEA

Photo: Indian Trade Commissioner

starvation. While this can be pointed to as proof that the ryot (the Indian name for the small peasant-proprietor) has not yet acquired sufficient strength to protect himself against a single bad season, on the other hand there is the undoubted fact that the development of communications has made it possible for food for man and beast to be rushed from more prosperous districts to the area in distress, and that given active and humane district officers, not a single man or beast need die. The last great famine, with the horrors to which the Indian countryside had been accustomed in the days of the Hindu or Mogul Kings or the earlier years of British rule occurred in 1899. And with the extension of artificial irrigation, the area liable to scarcity is being steadily reduced. Immunity of the less favoured tracts of India from the catastrophe of a wholesale failure of crops depends on the success of the measures for "dry farming," experimental schemes for which have been started under the aegis of the recently founded Imperial Council of Agricultural Research (India).

demand has sprung up for specific agricultural commodities which those areas have been able to produce. Witness the case of the ground-nut crop in some of the southern districts of Madras where, in response to a large demand from France, the indigenous variety has been replaced by the more esteemed Mauritius variety, and the ryot has had an accession of wealth which his previous crops never gave him. Or of the development of cotton growing, including several new and valuable varieties, due to the steady expansion of the cotton mill industry in Bombay and Madras and central India: or that of jute growing in eastern Bengal. The most recent instance is that of sugar cane which, throughout India in the last five years, has made remarkable progress to keep pace with the phenomenal increase in sugar factories in the same period, the ryot's enterprise having been helped by the plant breeder who has evolved new varieties. In all these cases, there has been a betterment of the grower's conditions of living. The thatched hut is yielding place to a tiled cottage, the meal of coarse

grain or millet has been replaced by a more generous diet of rice, butter, milk, and vegetables and the ryot's wife and daughters wear brighter coloured *saris* and silver jewellery. At the same time, it cannot be denied that much of the profit which should have gone legitimately to the grower has been intercepted by the merchant who finances the grower and buys his product, by the shipper who exports it, or by the factory owner in India who utilizes it. The grower is weak and unorganized, and is no



NATIVE FARMING

A scene in the Nilgiri Hills, southern India

Photo: M. Milward

match for the more powerful and better organized middleman, merchant or manufacturer. Legislative recognition of this fact has been accorded in a recent law which protects the grower of sugar-cane by fixing a minimum price for his cane. It is obvious, however, that until the co-operative movement has extended to agricultural production—at present it touches only agricultural credit, and even so only the fringe of it—and organized the growers, no law can afford an efficient guarantee that the ryots will get a reasonable share of the profits.

There has been a sharp set-back in the material condition of the agricultural classes since the world depression started at the

end of 1929. The view has been expressed in some quarters that India has been affected by the depression less than other countries, but the truth is precisely the reverse. As is well known, all over the world the price of manufactured products has fallen less in proportion than that of raw produce, and India being still predominantly an agricultural country, more than 60 per cent of the country's workers engaging in tilling of the soil as against 10 per cent employed in industries, the country as a whole has suffered more severely than more industrialized countries. The disparity in the price-level of raw materials and manufactured articles hits India all the more harshly, as the former comprise the bulk of the country's exports, while the latter are mostly imported (see *TRADE*). Crop production fell heavily, in some cases by over 50 per cent. A serious effect of this fall has been to aggravate the burden of agricultural indebtedness which has, whether under British rule or its predecessors, been a mill-stone round the ryot's neck. The provinces are tackling the problem each in its own ways: conciliation boards to scale down debts, and the advance of loans by the State to pay off creditors who agree to accept part payment in full satisfaction are common features in several of them. These, however, are only temporary palliatives, and even assuming that the size of the evil is now appreciably reduced—a large assumption considering the half-hearted way in which the problem has been attacked and the comparatively small scale on which remedial operations have been so far conducted—the next generation of agriculturists will certainly be in the same position as now. It is an old saying that the Indian cultivator is born in debt, increases in debt throughout his life, and dies more hopelessly in debt than ever. For a permanent remedy a more courageous policy than has hitherto been adopted is required. Seven hundred million pounds sterling is an estimate of the agricultural debt of India. Whether this is anywhere near the true figure or not—it probably errs on the side of under-estimating—it is admitted on all hands that the burden is excessive in terms of resources of the agricultural classes, and that no amount of effort on their part will, without State intervention, enable them to ease the burden. The problem is at present mainly one for the provinces to solve, and the task of solving it will fall on the new governments that took charge of the administration on 1st April, 1937, when, under the scheme of constitutional reforms sanctioned by the British Parliament, a large measure of provincial autonomy was made effective.



AGRICULTURE AND FARMING

1. Churning butter on a farm in Palitana. The method is slow and laborious but few Indian farmers can afford the capital outlay for mechanical churns. 2. Tea pickers taking out their baskets to the gardens in Assam. 3. Oxen treading out the corn, near Sanchi. This Biblical method of threshing is still found in country districts. 4. Storing wheat in jars which are reminiscent of the ones in *Ali Baba and the Forty Thieves*. 5. A sarta or primitive seed drill for sowing cotton. 6. Winnowing wheat by hand. As it is thrown from the basket the grain falls perpendicularly whilst the chaff is carried away by the wind. 7. Cattle at a water-hole near Karachi. 8. Steam disk plough in use on a large farm. 9. Hoeing the young cotton.

Photos: Indian State Railways, Indian Trade Commissioner; M. M. M. M.

But unless it is boldly dealt with, it may in a few years develop into a first class question affecting internal peace and security and a matter of concern to the Central Government. Meanwhile, the one bright spot in the rural horizon is a fact of great significance which has been observed all through the country from Madras to the Punjab. The catastrophic fall in agricultural prices has, in the case of the middle-class agriculturist, the man with 20 acres or more and some little capital or credit, led to a drastic cutting down of his personal and domestic expenditure. The tradition of lavishness in marriage expenses is giving way under economic pressure, and one-day weddings with the minimum of invited guests and feasting are becoming common.

The agriculture of India is determined, as the character of the agriculture of other countries is determined, by its soil and climate and the character and resources of the people. In a hot, thirsty land like India, there is an additional factor of vital importance, and that is the availability of water to crops by means of artificial irrigation. The geological structure of the country and the character of the climate over wide areas combine to produce a deceptive appearance of uniformity in its soils, but careful investigations have established the prevalence of four predominant types of soil found associated with the main geological series of India. These are the red soils derived from the rocks of the archæan system, the black cotton soils associated with the Deccan "trap," the geologically recent alluvium of the Indo-Gangetic plain which comprises the whole of northern India from Sind to Assam and the courses and the deltas of the great rivers of southern India, and the laterite soils which form a belt around the peninsula and extend through eastern Bengal into Assam and Burma.

The characteristics of these four kinds of soil may briefly be described as under. Indian soils are generally deficient in nitrogen, potash, and phosphoric acid. The red soils vary greatly in consistency, depth, and fertility from the poor, thin, gravelly, and light-coloured soils of the uplands to the rich, deep, darker-coloured, fertile soils of the lower levels. Where the soil is deep, it responds beneficially to artificial irrigation. As a rule, the soil is deficient in nitrogen, phosphoric acid and humus, but potash and lime are generally sufficient. The black cotton soil covers the whole of the Deccan districts of India, the greater part of Bombay, the whole of Berar, the western parts of the Central Provinces and Hyderabad, and the Coimbatore and Tinnevely districts of Madras. This soil in

Madras is not as rich and deep as that found outside, and the difference in this respect corresponds to a difference in its response to irrigation. In Madras, the soil reacts unfavourably to artificial watering, but experience in Bombay has been different. It is very tenacious of moisture, the damp soil contracts markedly on drying, producing wide and deep fissures in the fields, and the soil is so hard that it requires at least one heavy rain and a heavy and deep plough with powerful oxen before it can be broken up for cultivation. But where rains have been favourable, heavy crops of cotton and sorghum are raised on it. The chemical constituents of this soil are the same as those of the red soils. The alluvial tracts of India are at once the most extensive and agriculturally the most important and fertile. The soil is very deep, extends to as much as 1600 ft. below surface level, responds to irrigation, and generally speaking, is capable of growing a large variety of crops. But there are wide variations in its fertility ranging from the amazing fecundity of north Bihar to the sterility of those tracts in the Punjab where the difficulty of drainage leads to the accumulation of injurious salts of soda and magnesia. The differences in fertility seem to depend on the nature of the sub-soil and its capacity for drainage and retention of moisture. The sub-soil varies in texture from pure sand to loam, fine silt and heavy clay and its fertility exhibits a corresponding variety. Alluvial soils are usually low in nitrogen and organic matter, but potash is adequate and deficiency of phosphoric acid is not so marked as in other Indian soils. The laterite soils are usually thin and gravelly on the uplands where they have little power to retain moisture and are of poor agricultural value. But in the valleys and in the slopes, the soil improves to a heavy loam and clay which retain moisture and grows good crops. Like most Indian soils, the laterites are deficient in potash and phosphoric acid, but humus is present in qualities decidedly higher than in the other three types of soil. The distinguishing peculiarity of this soil is its "acidity," due to the almost total absence of lime and magnesium. The correction of this acidity is the main agricultural problem of laterite soils. The "plantation" crops of India, tea, coffee, and rubber are located in the laterite area of southern India, Bengal, and Assam.

From this description of the soils of India, it will be clear that nitrogen is the most important plant-food material which they lack. The manurial problem in India is in the main that of nitrogen deficiency. The Imperial Council of Agricultural Research



PLOUGHING RICE FIELDS BEFORE SOWING, IN KASHMIR

Photo. Fox

appointed a Committee to deal with the investigation of problems relating to the conservation of indigenous manurial resources and the development of the use of indigenous fertilizers. The findings were that the importance and suitability of indigenous organic manures like cattle manure, green manure, bone meal, fish manure, and oil cakes were clearly established; and that artificial fertilizers gave the best results in conjunction with organic manures or in the presence of adequate supplies of organic matter in the soil.

A view held by many was that most of the land now under cultivation in India having been under cultivation for hundreds of years, must be suffering a progressive diminution in its fertility. But investigations made by the Royal Commission on Agriculture in India under the Chairmanship of the Marquess of Linlithgow have proved that, though little of the nitrogen removed is returned to the soil in the form of manure, the land is maintained at a low but stable level of fertility, as a result of the large

annual increments of nitrogen which accrue from natural recuperative processes in the soil.

Northern India is outside the tropics and has an extremely hot summer followed by the rains of the south-west or early monsoon at the cessation of which a cold weather tends to establish itself. This hardens by December into a winter which in the Punjab is almost of European severity. These climatic conditions have resulted in two well defined crop seasons, the rainy and the cold, yielding two distinct harvests, the autumn and the spring. Southern India is in the tropics, and while some of its districts get the benefit of the south-west monsoon, the larger part of it depends on the north-east monsoon which prevails from October to January. The summer heat is more moderate than in northern India, but there is no cold weather, the distinction between the seasons is nominal, and there are merely early and late sowings of the same crops. Rice is an unimportant crop in the Punjab where wheat rules without a rival; in the

United Provinces rice and wheat are of nearly equal importance; wheat cultivation is insignificant in southern India. Roughly speaking, in general terms it may be stated that north-western India is the home of wheat, while southern and north-eastern India are the home of rice. The typical tropical products such as the coconut, the banana, and the ground-nut flourish in southern India, though paradoxically enough sugar-cane, which is essentially a tropical plant, is grown much more extensively in northern India, the explanation probably being that the alluvium of the Gangetic valley furnishes more cheaply the water which it needs. The vegetables and fruits of the temperate regions grow in abundance on the plains of northern India, while in southern India these can be raised only on the hills and on the elevated table-land of Mysore. Jute is the monopoly of eastern Bengal.

Except where perennial irrigation is assured by canals leading from the great rivers or from wells, the whole country is dependent on the monsoon, all major agricultural operations being timed and fixed by their occurrence, and thus necessarily restricted to a few months of the year. This fact brings out the supreme importance of the extension of irrigation, whose value as a protection against famine has already been referred to. The total area irrigated in British India is 51,000,000 acres of

which 30,000,000 acres derive their supply from works constructed by the State. Amongst schemes recently completed may be mentioned the Sukkur barrage in Sind, whose function is to lead up the great river Indus, store the water at Sukkur, and from there to distribute it all the year round according to the requirements of cultivation. It is designed to irrigate 6,000,000 acres. The Sutlej valley works in the Punjab provide water for over 5,000,000 acres. The Mettur dam in Madras is the largest dam in the world and is designed to irrigate 1½ million acres, and will in addition provide cheap electric light and power to many districts in southern India.

The Indian farmer is uneducated, but it would be a mistake to suppose that he is averse to new ideas, and is unwilling to adopt improvements whose value has been ocularly demonstrated. The limiting factor is more often his means than his ignorance and conservatism. Proof of this view is to be found in the readiness with which the ryot takes to new and improved varieties of crops and to the flexibility he displays in extending or curtailing the area under a crop according to the demands of the market. The biggest spectacular successes of the scientific departments of agriculture have been obtained through the agency of the plant breeder in evolving strains of superior quality, or greater yielding capacity and disease resistance, and better



INDIAN CATTLE AT A WATER HOLE
In the background is the fort, Lahore.
Photo: Indian State Railways

adaptability to environment. The area under improved varieties of crops is now over 20,000,000 acres. The substitution of improved varieties for the older ones has occurred under all crops, but the process has been dramatic in the case of sugar-cane, where in ten years the area under improved canes has jumped up from 50,000 acres to 2,700,000 acres. The scope of scientific agricultural research, which has been actively stimulated in India after the creation of the Imperial Council of Agricultural Research in 1929, extends far beyond the evolution of new strains of crops. It includes research in soils, in crop pests and insects and plant diseases, soil management, the technique of field experiments, and agricultural meteorology. Progress has also been made in the provision of suitable implements to promote speedier working and better cultivation and harvesting. It should, however, be remembered that the smallness of the holdings precludes any large mechanization of agriculture, and that the displacement of human labour by machinery is bound to upset the economic balance of the countryside.

There is an unlimited scope for agricultural research in India. Particularly is there need for State advice and assistance in the matter of cattle improvement which is, a subject of vital importance, that has only lately received organized consideration. The breeding and rearing of good serviceable cattle for work and for dairying must become an integral part of a properly balanced system of agriculture. There is splendid material for breeding milking cattle in the Indian cow and the she-buffalo, the milk of the former containing 5 per cent of butter-fat as against the 3·7 per cent of the English cow, and the milk of the latter as much as 7 per cent. What is wanted is proper feeding and management combined with controlled breeding and the elimination of uneconomic cattle.

The growth of population and the consequent expansion of cultivation in the nineteenth century led to a demand for more bullock-power, and this was met not by an increase in the efficiency of the cattle, but by an increase in their numbers. Simultaneously, the increase of tillage encroached on the better grazing land in a country where stall feeding is little practised, and the animals depend on the village common and on grass lands close to the village. The worse the conditions for rearing efficient cattle, the greater the numbers kept tended to be. Cows became less fertile and their calves became undersized, and the cultivator, in the attempt to secure more bullock power, bred more and more cattle. The task of reversing the process is a gigantic one, but

is being faced. There are still many fine cattle belonging to a number of well recognized breeds to be found such as the Haryana and Sahiwal of the Punjab, the Thar Parker and Sindhi of Sind, the Hankrej of Gujarat, the Gir of Kathiawar, and the Ongole and Mysore of south India. From these good breeds can be established pure and improved types of indigenous cattle.

India presents a large field of work for the veterinary expert and practitioner. Correct figures are not available, but what record there is indicates that the annual number of deaths from contagious diseases is very considerable. Rinderpest takes the largest toll, then follow haemorrhagic septicaemia, foot-and-mouth disease, anthrax, black-quarter and diseases due to entozoal parasites. The Research Council is devoting attention to all these diseases. A method of vaccination against rinderpest with goat virus of reduced virulence, devised at the Central Institute of Veterinary Research on the Himalayas, seems full of promise.

Since Lord Linnithgow became Governor-General satisfactory preliminaries for the betterment of the peasants have been instituted almost all over British India and in many Indian States. The whole country has become "peasant conscious" in the past three years.

AHMAD, MIRZA GHULAM (1838-1908)
The founder of a reform movement within the Mohammedan religion. Ghulam Ahmad was born in a Mohammedan family in the remote village of Qadian in the Punjab. Little is known of his boyhood years. He started teaching in 1879. He declared himself to be the Christian Messiah and the Mohammedan Mahdi. He started a movement, known as the "Ahmadiyya Movement," under what he considered "an express Divine command" to reform Mohammedanism. He claimed to be an exponent of the real teachings of Islam, but his teaching was an attempt to find a middle path between the strictest orthodoxy and the extreme rationalism. He edited two journals, one in Urdu, the *Al-Hakam*, and another in English, *The Review of Religions*, and published numerous tracts.

From the outset Mirza Ghulam Ahmad encountered bitter and determined opposition. But the movement he initiated has steadily gone forward. There are now hundreds of thousands of Ahmadiyyats in different parts of the world. The sect's headquarters are at Qadian.

AHMADABAD. A city in the Bombay Presidency situated on the River Sabarmati which flows south for 70 miles before it empties into the Gulf of Cambay. Across the river, opposite Ahmadabad is Sabarmati

which, to all intents and purposes is part of Ahmadabad. The city is notable for the beauty of its temples. It is an industrial town serving a large agricultural area, and



THE BAZAAR, AHMADABAD
Photo Indian State Railways

has several feeder railway lines besides being connected with Bombay by a main line. There are cotton mills and other industries. Population (1931) 313,789.

ALBUQUERQUE, AFFONSO DE (1462-1516). The greatest Portuguese general and administrator in the East. He was of royal blood, though it came to him through illegitimate ancestors. He was educated at the Court in Lisbon and saw his first war service when he was only 14.

In 1503, the King of Portugal sent him to India in command of a squadron. He sailed with the purpose of founding a Portuguese Empire in the East. The state of southern India, especially the Malabar coast, was at this time very favourable to his aspirations as the rulers were weak and constantly fighting with one another. The Portuguese had already established either factories (i.e. trading stations) or fortresses at a number of places on the western coast of India. In pursuit of his policy, he captured the island of Goa, an international trading centre. As soon as he gained complete possession of Goa, he put the Moslem male population to the sword. He did not confine his attention to India, but aimed at taking all the ports in southern Asia, including Malacca, to make the sea-route clear for the European nations to trade in the East.

The conquest of Goa was one of the greatest achievements of Albuquerque's governorship. It gave to the Portuguese a commercial and a political capital. He had a genius for war as well as civil administration. His first thought after the completion of fortifications of Goa was to provide for its future government and strengthen relations with Indian rulers. In Goa city he estab-

lished a Senate modelled on that of Lisbon, but he entrusted the administration of justice and finance to Hindu officials and clerks. He had also a regiment of Indian sepoys, officered by Indians. He established schools for the education of Indian children to teach them Portuguese, and founded hospitals at Goa, Cochin, and elsewhere. He upheld the constitution of the ancient Hindu village communities and did not interfere with Indian customs, except the cruel practice of *sati* which he at once abolished.

In the brief space of six years that he was Governor, he realized his great designs of conquest, except that he failed to capture Aden.

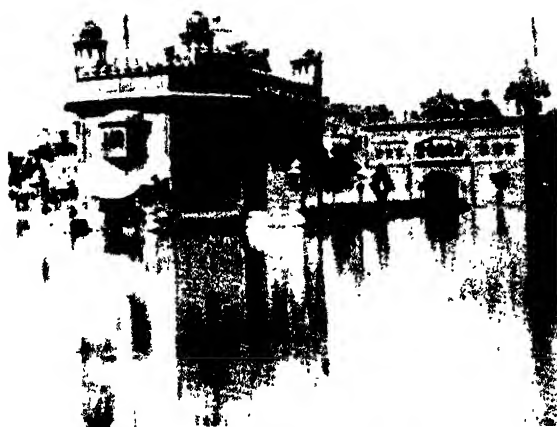
AMBEDKAR, DR. BHIMRAO RAMJI (born 1893). The prominent leader of the depressed classes in India. He was born of humble parents in Bombay Presidency. After taking his degree at an Indian University, he proceeded to America, as the Maharaja Gaekwar's scholar, to study economics and sociology, and obtained his doctorate from Columbia University. Later, in England he took his D.Sc. in Economics and Commerce from London University, and was also called to the Bar in 1923. On his return to India he was appointed Professor of Political Economy at the Government College of Commerce in Bombay. He was witness before the Lord Southborough Franchise Committee and the Royal Commission on Indian Currency.

Dr. Ambedkar has been agitating for many years to have the social wrongs, from which the "untouchables" (now called "Harijans" or beloved of the gods) suffer at the hands of caste Hindus, redressed. He is the founder of the *Bahishkrt Hitakarni Subbha* (Depressed Classes Welfare League) and editor of *Bahishkrt Bharat* ("Untouchable" India). As leader of the Harijans he has done much to rouse their consciousness.

Dr. Ambedkar has presided over several Harijan conferences held in different parts of India and represented his community at the Round Table Conferences on constitutional reforms in London. He had a series of conferences with Mahatma Gandhi in Yeravda jail over the latter's fast unto death on the question of representation of the "untouchables" in the Communal Award in connection with the Federal scheme, and was signatory to the Yeravda Pact between caste Hindus and "untouchables," which led to the amendment of the Award by the British Government.

If the treatment of the Harijans by caste Hindus is not improved, he proposes to convert them *en masse* to another faith.

AMRITSAR. The chief city of the Sikhs, over 250,000 of whom live in it. Amritsar



GOLDEN TEMPLE, AMRITSAR

It takes its name from the dome which is of copper covered with gold leaf.

Photo Indian State Railways

lies to the north-east of the Punjab. It is connected by main line railway with Karachi, Delhi and Peshawar, the last town via Lahore. It is consequently an important trade centre, and is particularly important as the depot for trade with Afghanistan and other countries beyond the Himalayas. The most important architectural feature is the Golden Temple which stands on an island in a lake. Carpet making is the largest industry. Population (1931) 264,840.

ANDAMAN ISLANDS. See article, Vol. I.

ANDREWS, CHARLES FREER (born 1871). Affectionately called "Dinbandhu" (Friend of the Poor) by Indians because of his devotion to their cause. Born in Birmingham, he was educated in his native town and at Cambridge. He went out to India as Professor of English at St. Stephen's College in Delhi. Later, in 1913, he joined the Vishwa-Bharati, the poet Rabindranath Tagore's international institution at Bolpur (Bengal), and he retains his connection with it to this day as its Vice-President.

Mr. Andrews was actively connected with Mr. Gandhi in a passive resistance movement in South Africa in 1913-14, and helped in the Smuts-Gandhi Agreement. He went to Fiji to discuss the abolition of indentured Indian labour; he again visited South Africa in connection with the Indo-Union Agreement in 1927; and he went to British Guiana with reference to grievances of Indian settlers there.

Mr. Andrews is a prolific contributor to newspapers, and has also written a number of books, such as *Christianity and the Labour Problem*, *The Indian Problem* *The Drink and*

Drug Evil, *The Renaissance in India*, *Mahatma Gandhi's Ideas*, *What I Owe to Christ*, *Christ in Silence*.

ANIMAL LIFE. Many thousands of years ago the southern portion of India formed, with Ceylon, part of a great southern continent which was cut off from the northern Europeo-Asiatic continent by a wide arm of the sea extending across what is now the area of the Great Plains. The southern continent had a more primitive fauna of its own; but later, when it was broken up by subsidence of the land to the south and joined by elevation to the northern continent, a large number of the more highly organized animals of the latter migrated southward and occupied the country. Some reached Ceylon before its severance from India, some, later comers, were cut off therefrom by the formation of Palk Strait. This phenomenon

may be illustrated by a few familiar examples. The monkeys, leopard, jackal, sloth bear, elephant, wild boar, sambhur, chital, and buffalo reached Ceylon; whereas the tiger, wolf, hyena, hog-deer, gaur and others were too late to get a footing there.

The geological history of India summarized above, explains the mixture of elements in



INDIAN SNAKE CHARMER

The snake is a 24-ft. long python.

Photo Keystone

its animal life, but by its general faunistic features the country is roughly divisible into the following areas: the Himalayas; the Indo-Gangetic plain and, south of the latter, Peninsular India, the remains of the original southern continent. The animals of the Himalayas closely resemble those of the countries to the east of the Bay of Bengal, with a central Asiatic element exemplified by the snow leopard, northern lynx, wolf, fox, red bear, yak, and others. Similarly those of the Great Plains, such as

or "toddy cats" occur throughout the country; mongooses are abundant everywhere, and the striped hyena ranges from Nepal to the Nilgiris. The dog family is represented by the wolf, mainly in the north, the ubiquitous jackal and the wild dog, and by the foxes of the hills and plains. Otters frequent all the rivers. Weasels and stoats occur only in the Himalayas, the yellow-throated marten in those mountains and southern India; the ratel or "Indian badger" throughout the country. The sloth bear has



THE PUSH OF WAR

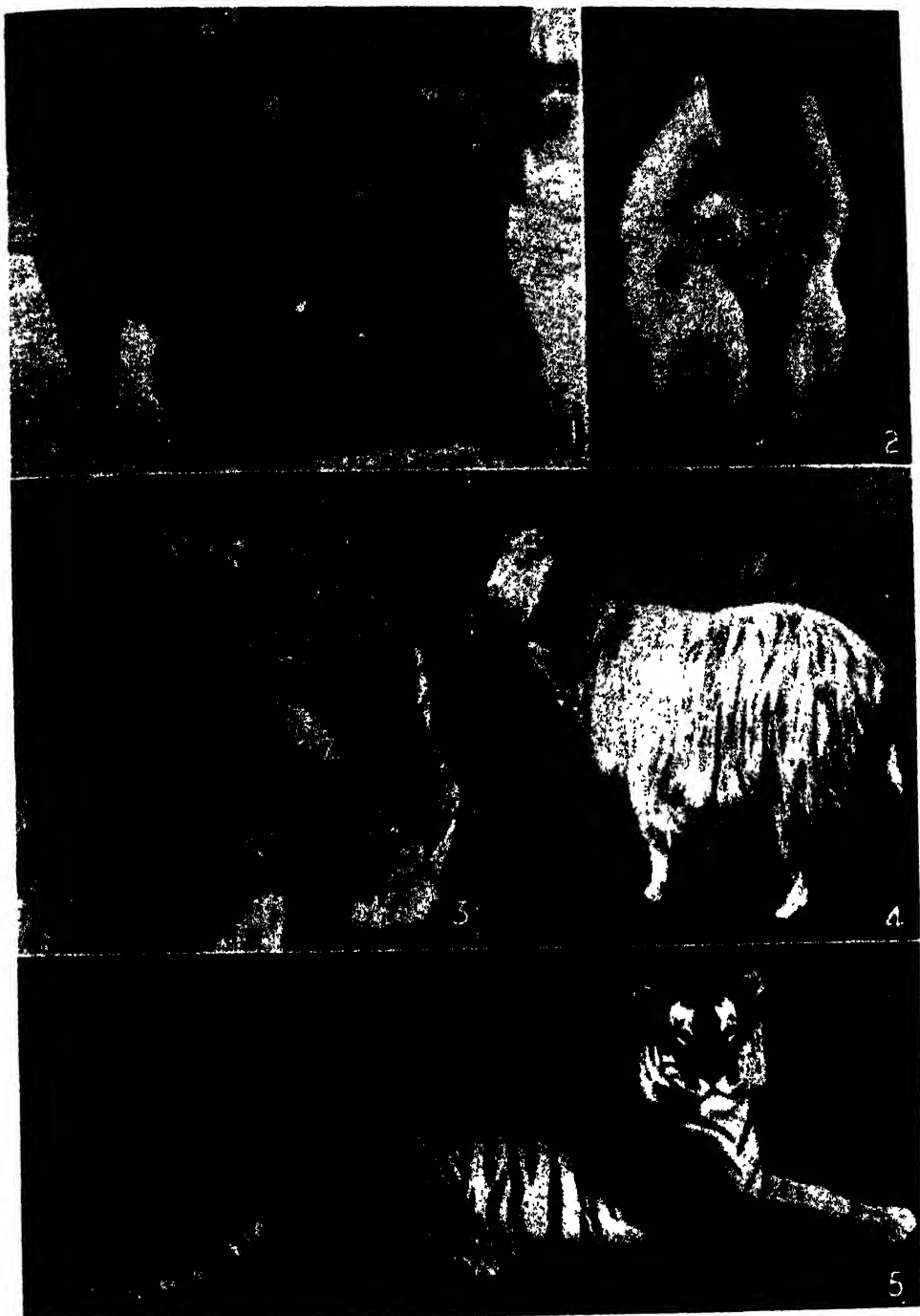
A battle between two bull elephants, a traditional spectacle in many parts of India.

Photo Keystone

the lion, hunting leopard, hyena, jackal, gazelle, etc., are like the animals of Baluchistan and Persia, and entered India by that route. Finally the fauna of Peninsular India, especially of Malabar, shows close resemblance to that of Ceylon.

All the principal orders of mammals are represented. The primates by the hoolock gibbon of Assam, by many different kinds of leaf monkeys and macaques, ranging from the Himalayas southward and by lorises restricted to south and north-east India. The insectivora by tree shrews, hedgehogs, moles and ground shrews, of which the most familiar is the musk rat. Bats in great variety abound, the flying foxes being the most noticeable. The carnivora are more important. The tiger and panther or leopard are widely distributed, whereas the lion is now confined to the Gir forest, Gujarat. There are many smaller species of the cat family, but the cheetah or hunting leopard is now extinct. Civet cats and palm civets

a similar distribution; but the red bear and black bear are found only in the Himalayas. Hares, porcupines, squirrels and flying squirrels, bamboo rats, bandicoot rats, and smaller rats, mice and voles in great variety are the principal rodents and widely distributed. The scaly anteater or armadillo is found throughout the country. Wild elephants frequent some of the forested districts; the rhinoceros still holds its own in Nepal, and the two kinds of wild ass, the kiang and the gorkha, occur in Kashmir and Cutch respectively. The cloven-hoofed ungulates are more numerous. The wild boar is widely distributed, whereas the pigmy hog inhabits the Himalayas. Of the deer, the muntjac or barking deer, the sambhur, and the chital or spotted deer, are common almost everywhere, but the hog-deer and the swamp deer are not found in southern India. The hangul is restricted to Kashmir, and the musk deer to the Himalayas. Typical antelopes are the nilgai, the four-horned,



ANIMAL LIFE

1. Indian rhinoceros. 2. Langur monkey with young. 3. Head of leopard. 4. Mountain goat from the Ledar Valley. 5. Mysore tiger.

Photos: Indian State Railways, Mysore State, Bond

the blackbuck, and Bennett's gazelle. The serow and the goral, akin to the chamois, occur in the Himalayas, and the related but rare takin in Bhutan. Apart from the Nilgiri ibex or thar of southern India, all the different kinds of goats and sheep are restricted to the northern mountains. Of these the principal species are the markhor, the Himalayan ibex, the thar, the bharal or blue sheep, Hodgson's sheep, and the urial. Cattle are represented by the buffalo, now very scarce as a wild animal, the gaur or "bison," which has a wide distribution, and the yak, an alien from Tibet. Zebus, or humped cattle, are all domesticated.

Whales, porpoises, and dolphins of many kinds may be washed ashore, some oceanic porpoises ascend tidal rivers, but the most interesting species of this group is the purely fresh-water dolphin of the Indus, Ganges, and Brahmaputra. The dugong of the Indian Ocean has been captured off the coast of southern India.

The bird life of India is rich in numbers of individuals and species; but an important element is composed of common migratory European species. It is the resident species—of which there are few—that stamp the fauna as peculiar. The so-called passerine birds, which outnumber the other groups, and are mostly small, comprise crows, of which the ubiquitous house crow is the commonest; laughing thrushes, babblers, bulbuls, the shama, flycatchers, minevents, drongos, warblers, of which the tailor-bird is the most famous; mynahs, the weaver-bird, the white eye, sunbirds, flowerpeckers, as well as wagtails, shrikes, swallows, and others.

The next group is represented by woodpeckers, barbets, including the "coppersmith," bee-eaters, the pied and white-breasted kingfishers, hornbills and cuckoos, including the koel and the hawk cuckoo, and "brain-fever bird." Of parrots there are a few species of which the green and blossom-headed parakeets are examples. Predatory birds comprise eagle owls, the spotted owlet, the king, griffon and white-backed vultures, the crested serpent eagle, the pariah kite or "chil," the shikra, a kind

of goshawk, and the lugger falcon. Of so-called game birds the most important are the peafowl, junglefowl, kalij pheasant, monaul or impeyan pheasant, spur-fowl. Turtle doves, and the Indian ring dove represent the next group. There are also rails, coots and cranes, the largest of the last being the sarus; bustards, of which the smaller kind are called florikans, jacanas, many kinds of plovers, and the most familiar of the gull tribe and terns, and the Indian skimmers. Pelicans are represented by the spotted-billed species; the cormorant family by the peculiar Indian darter; storks by the adjutant, the white-necked, and the wood stork; herons by the cattle egret and the paddy bird;

and the waterfowl or ducks and geese by the comb duck, spot-billed duck, tree duck, and bar-headed goose.

Reptiles, as in other sub-tropical countries, are abundant. Apart from the poisonous snakes, the most important are the crocodile, of which there are three kinds, the narrow-snouted fish-eating gaviol of the



BUFFALO FIGHT

This contest, a relic of earlier days, was staged in Baroda

Photo Sport and General

Indus, Ganges, and Brahmaputra and their tributaries; the mugger, often wrongly called alligator, found in fresh waters everywhere; and the larger estuarine crocodile of the estuaries and sea of the east coast. Tortoises are plentiful, the starred tortoise, hinged terrapins, land terrapins, water terrapins, including batagurs, and soft tortoises being examples. Of the numerous species of lizards the chameleon, the changeable, and the spiny-tailed skinks, and the monitor, the largest, alone need mention. The most noticeable snakes, perhaps, are the python, sand snake, shield-tailed snake, rat snake, tree snake, and whip snake, which are harmless, and the poisonous krait cobra, Russell's viper, and green tree viper.

Batrachians or amphibians are represented by many different species of ordinary frogs, of which the largest, the tigrine frog, may be 6 in. long; by narrow-mouthed frogs and many kinds of toads of which the most familiar is the black-spotted, also by legless worm-like caecilians.

Tropical marine fishes are abundant in the Indian Ocean, and some of them ascend



INDIAN BIRDS

1. Scarlet Minnet. 2. Black-naped Fly catcher. 3. Grackle. 4. Blue-checked Barbet. 5. Fairy Blue bird. 6. Drongo.
7. Great Indian Hornbill. 8. Kingfisher. 9. Flamingo. 10. Pelican. 11. Adjutant Stork. 12. Peacock.

tidal rivers. The freshwater fishes are represented principally by the families of the eels, the catfishes, and carps. One of the carps, a barbel known as the mahseer, which may weigh nearly 100 lb., being a favourite of the angler.

Of the vast host of so-called invertebrate animals, most of which have only comprehensive popular names, it is not possible to write, although all of them are interesting to naturalists, and many of them of great economic importance.

ANSARI, DR. MUKHTAR AHMED (1880-1936). A Moslem prominent in the history of the Indian Congress. Ansari was born at Gazipore. His brilliant University record and medical career in England fitted him for splendid service in his own country, and on his return to India, he rapidly won a great reputation as a physician and surgeon.

Dr. Ansari was one of Mahatma Gandhi's closest friends and confidants. In 1912-13 he took a leading part in the Home Rule movement, and in 1917 he was elected President of the All-India Moslem League. He also presided over the 42nd session of the Indian National Congress and the All-Parties Conference at Calcutta in 1928. He was imprisoned during the Non-cooperation movement in 1930 and 1932; became President of the Congress Parliamentary Board in 1934-35, and laboured hard to bring the Congress back to the "Parliamentary mentality." He was mainly responsible for the new direction of Congress activities. As a leader of Moslems, he wanted to safeguard their rights and liberties, and it was due to his efforts, perhaps, that the Congress decided not to condemn the Communal Award (in the new Constitution), which satisfied the legitimate demands of Moslems.

ARAVALLI HILLS. A mountain range which begins a few miles north-west of Alwar and stretches in a direct line south-west through Rajputana and Ajmer-Merwara until it culminates in the sacred peak of Mount Abu (5650 ft.). The range for the most part is uniform in height and width, about 2000 ft. and 40 miles. In length it stretches over 300 miles.

ARCHAEOLOGY. The history of archaeological work in India begins with the appointment of Major-General Sir A. Cunningham as Director-General of Archaeology during the Viceroyalty of Lord Canning. During the twenty-three years that Cunningham held office he was able to inspect and survey most of the important monuments in central and northern India, and the twenty-three volumes of his Archaeological Survey Reports remain to this day a storehouse of valuable information. What Cun-

ningham did for northern India was done in equal measure by Dr. Burgess in the southern Presidencies of Bombay and Madras, and some thirteen volumes of the larger Imperial Series of Reports, along with such monographs as the *Cave Temples of India*, testify to the great results achieved. Neither of these officers had, however, either the means or the time to undertake any works of conservation or excavation, and it was not until 1902 that it was thought fit to revive the post of Director-General of Archaeology which had remained in abeyance for more than thirteen years, and to bring out Sir John Marshall, whose services in all branches during the three decades that he held charge of it will be remembered with gratitude by the future generations of India. As many as 3000 monuments, Hindu, Buddhist, Jaina, as well as Moslem, have received attention, and many of them have been thoroughly and scientifically overhauled and repaired or restored as circumstances have demanded.

The earliest artifacts found in India are rough chipped stone implements of the palaeolithic age which occur in abundance in the Madras Presidency, and polished and unpolished celts and copper implements in northern India. Numerous buried cities and Buddhist, Jaina, Hindu, and Moslem religious sites have been excavated. The most remarkable achievement in this line has been the discovery of extensive remains of the chalcolithic culture which, in the third and fourth millennia, extended over the whole of western Asia and the region bordering on the Mediterranean Sea. The first remains of this culture in India were found by Cunningham himself in the early seventies of the last century, at Harappa in the Punjab, where he brought to light a number of seals with a semi-pictographic writing, which he declared to be the prototype of the Brahmi script of the Maurya and later periods. Mr. D. R. Sahni, C.I.E., of the Archaeological Survey of India, acquired these mounds in 1920-21, and carried out systematic excavations among them and brought to light other seals of the same type, pottery vases with pointed bases, and other objects typical of this ancient culture. The better preserved remains at Mohenjodaro (the "Mound of the Dead") are situated on an ancient bed of the River Indus at a distance of 416 miles west of Harappa, and were discovered by the late Mr. R. D. Banerji. Here the Archaeological department has ascertained the existence of five or six successive cities built on the ruins of another, and extensive portions of the last three of these cities have been exposed (*circa* 3500 to 2500 B.C.). The results achieved have been very ably dealt

with in Sir John Marshall's *Mohenjodaro and the Indus Civilization*. The remains brought to light here represent a very well planned city with broad streets running from one end to the other, intersected by narrower lanes to form regular blocks of buildings. The houses are all built of well burnt bricks of regular dimension, laid in mud or gypsum mortar and provided in many cases with bath-rooms and separate wells, with almost modern means of drainage. The arts practised were numerous, including those of casting of bronze and copper figures, engraving and enamelling of steatite seals with animal and other devices, executed in a most realistic fashion. The skeletal remains brought to light, point to the presence here of elements of several different races. Their religion included the worship of a female deity resembling the mother goddesses of Mesopotamia, etc., and a male deity who may be regarded as the prototype of Siva, "the protector of wild animals" of later Hinduism. Prof. Langdon of Oxford University, who has devoted much labour to reading seals and seal impressions from Harappa and Mohenjodaro, has no doubt that the Aryans must have arrived in India at a far more ancient date than history admits. The discoveries of Indian seals in Mesopotamian sites and of objects of Mesopotamian origin in the Indus valley prove intercourse between the two countries. Numerous other sites of this culture have been located in Sind by Mr. N. G. Majumdar, and by Sir Aurel Stein in Baluchistan and in the south of Persia. That this ancient culture left its impress upon the later civilizations of India goes without saying. Unfortunately there is a gap of over 2000 years between the end of the chalcolithic Indus culture and the beginning of the historic period. This can only be filled by the systematic exploration of well selected sites. So much seems certain, that several of the arts which were so well known in the earlier period were forgotten, and were revived only after many centuries of desuetude. Thus burnt bricks as building material had yielded place to timber, and the most ancient monument of this material is the great palisade of the Maurya king, Chandragupta, at Pataliputra. Other buildings in this material have perished, and designs of their architecture can only be guessed from the rock-cut copies which have survived in the Buddhist, Brahminical, and Jaina temples and Viharas, in the Nagarjuni hills, in eastern India; and at Karla, Bhaja, etc., in the Bombay Presidency. The only structural temple of the Maurya period, besides the big stupas of Asoka, which has so far been discovered, is a circular Buddhist

temple built of wedge-shaped burnt bricks of large size at Bairat in the Jaipur State.

The majority of the earliest monuments of the historic period pertain to the Buddhist religion. For about 600 years after the death of Buddha, no images of him were made in stone or other material, and his presence on monuments of these centuries is simply represented by symbols, i.e., his birth by the lotus flower, his enlightenment by his "Wisdom Tree," his first sermon by the wheel, etc. Opinion is divided as to where the first plastic representations of Buddha were evolved. One view on the subject is that they were brought into being simultaneously by the Greco-Bactrian artists on the North-West Frontier of India and by the indigenous artists at Mathura. The greatest patron of Buddhism was Asoka (272-232 B.C.) Near large cities and on roads to places of pilgrimage, he erected

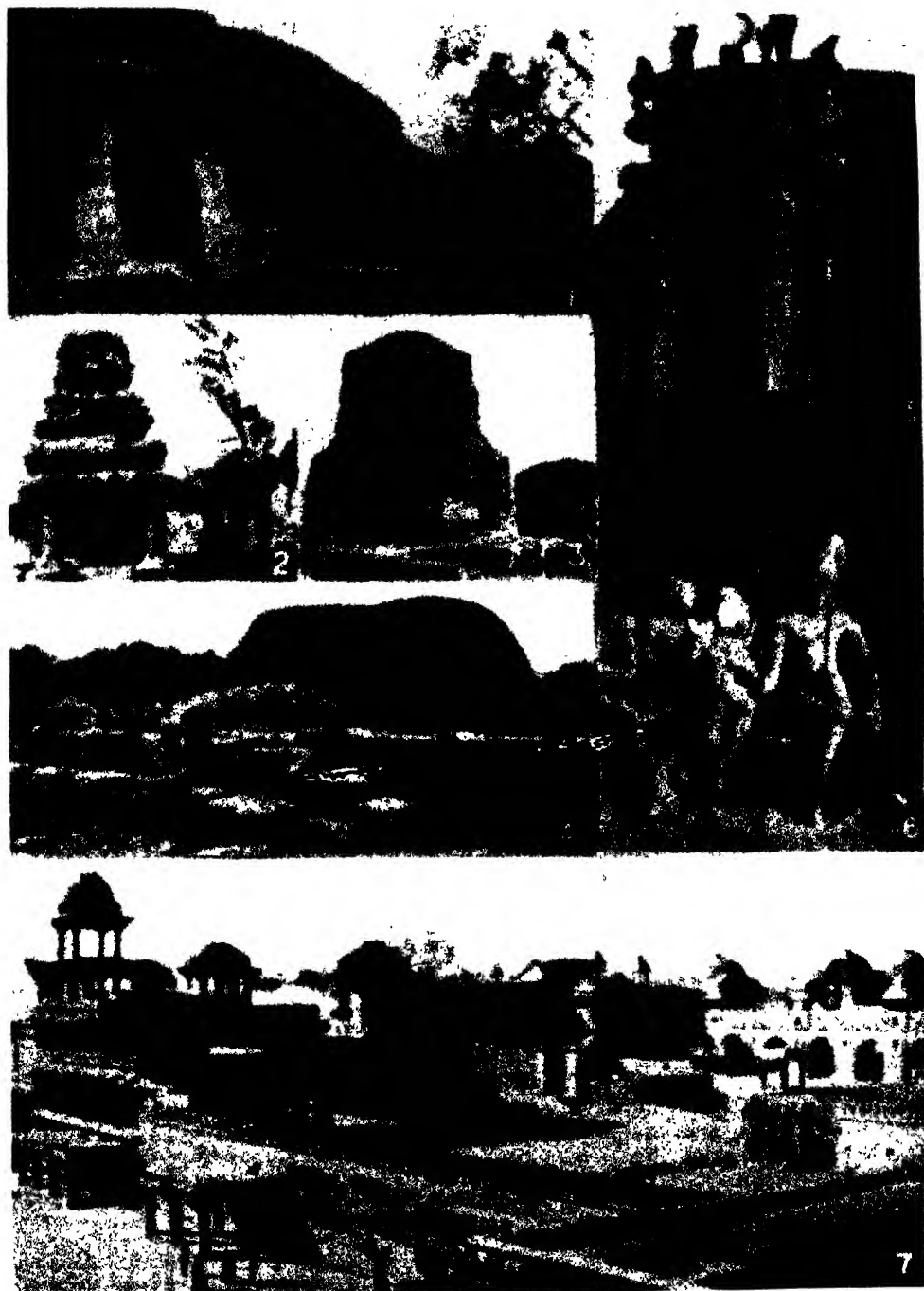
highly-polished monolithic sandstone pillars of great size and crowned with fine figures of one or other of the four noble animals of the Buddhist texts, i.e. the lion, the elephant, the bull, and the horse. The edicts engraved on these columns and on live rocks, which are scattered over the length and breadth of India, are intended to promulgate moral and religious precepts and to prohibit schisms in the Buddhist church. A much praised act of this monarch was the recovery of the cremated body relics of the Buddha, from seven out of the eight original stupas, and re-enshrinement of them in numerous stupas built by himself. Some of these relic deposits were dug out and redeposited by the Kushan king, Kanishka, in the second century A.D. The Archaeological Department



CARVED STONE PILLAR AT SANCHI

The monuments at Sanchi are among the most beautiful in India

Photo Indian State Railways



ARCHAEOLOGICAL REMAINS

1. Udayagiri Cave, Orissa, A.D. 400. 2. Rock cut Temple of the Seven Pagodas near Madras, A.D. 600.
3. Stupa at Sarnath. Built by Asoka, it commemorated Buddha's first lecture. 4. The Dharmarajika stupa, Taxila, first to fifth century A.D. 5. North gate and stupa, Sanchi, first century B.C. The three stupas and subsidiary monuments at Sanchi are the most perfect examples of such monuments in India.
6. Sculpture from the caves at Elephanta 7. Ruins of Akbar's Palace at Futtchpore Sikri.

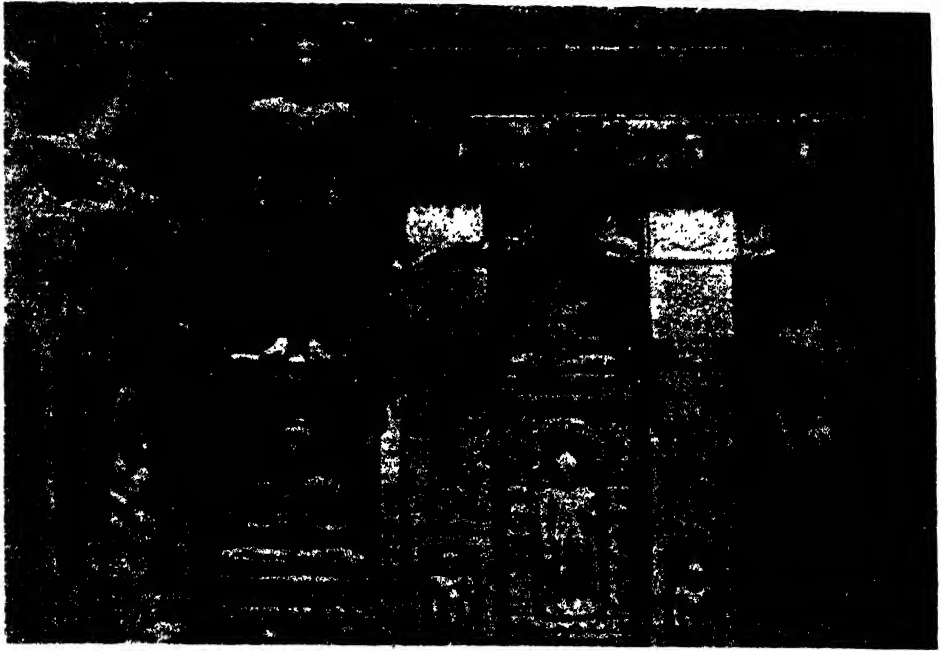
Photos: Indian State Railways, M. M. Seward, K. de B. Codrington

has brought to light several such deposits at Peshawar, Taxila, Nagarjunikonda, in the Madras Presidency and elsewhere, and restored them to the Buddhists in Burma, Ceylon, and Benares, etc. Two of the principal centres of Buddhist culture were Taxila, near Rawalpindi, and Sanchi in the Bhopal State, both of which have been systematically explored and conserved. The former was in existence probably from about 1000 B.C. to the sixth century A.D., when it was destroyed by the Huns. The earliest of the three cities which flourished on this site, now known as the Bhir mound, was the one in existence at the time of Alexander the Great's invasion of India. The second city, which was founded by the Greek kings in the second century B.C., was well laid out with broad streets, and remains of various buildings, including a palace, have been exposed, as also several deposits of gold and silver jewellery of high artistic merit. This site also yielded the only Aramaic inscription yet found in India, which has been identified as an ancient edict of Asoka in that script. Other monuments brought to light at Taxila are Buddhist stupas, and monasteries of large size and in styles of architecture in diaper patterned masonry, which can be positively assigned to different periods and dynasties. The three stupas and subsidiary monuments which have been excavated and preserved at Sanchi, are the most beautiful and perfect examples of such monuments to be found anywhere in India. The main stupa, which was originally built by Asoka, was enlarged to about double its size in about the middle of the second century A.C. The body relics of Sariputta and Mahamogalana, the two principal disciples of the Buddha, were discovered in this stupa. The monasteries and chapels which have survived on this site date from the medieval period, their predecessors which were made of wood having perished in antiquity.

Other Buddhist sites that have received attention are the eight famous places of Buddhist pilgrimage, which have been thoroughly explored and preserved, and definitely identified with the help of inscriptions and other monumental evidences. The Lumbini garden (*vulgo*, Rumminderi) is to this day marked by a stone pillar of Asoka, which remains *in situ* to proclaim that "Here the Buddha Sakyamuni was born," and it also mentioned the remission of certain taxes. The ancient remains around this pillar are being explored by the Government of Nepal. The monuments that have survived at Bodhi Gaya, where in the 36th year of his life the Buddha attained complete spiritual wisdom, are a polished stone throne

set up by Asoka, the stone railing which surrounded the temple and the Buddha's promenade of the first century B.C. The Deer Park (Sarnath, near Benares) is famous as the scene of the first lecture of the Buddha. Here, as on other Buddhist sites, the most ancient monuments exposed by excavation are those erected by Asoka, namely, a brick stupa, later enlarged seven times, which probably contained a relic of the Buddha and was surmounted, like the stupa at Sanchi, by a polished stone monolithic rail; and an edict pillar with fine figures of lions back to back. The scene of the Buddha's death has been located at Kasia, in the Gorakhpur district, where, besides monasteries and chapels of the medieval period, the excavations have revealed a large recumbent image of the dying Buddha of about the fifth century A.D. The other four places of pilgrimage derive their sanctity from miracles which Buddha performed in those places, to impress heretics or for other purposes. At Rajagriha, the ancient capital of Magadha, where the Buddha subdued and absolved an infuriated elephant which had been let loose to kill him, several of the places mentioned by the Chinese pilgrims have been identified, e.g. the site of the Sattapanni hall where the first Buddhist council was held, the Vulture's peak, etc. Sravasti, where the Buddha accepted the gift of a monastery, built by the wealthy merchant, Anathapinda, and where he preached for many years, has been identified with the remains known as Saheth-Maheth on the borders of the Gonda and Bahraich districts, and Sankasya, where the Master descended from the heaven of the thirty-three gods, with Sankisa, in the Farrukhabad district, where the elephant capital of an Asoka pillar has remained in good condition. The large mass of ruins at the village of Kosam, distant 30 miles from Allahabad, represents Kausambi, to which, according to Buddhist texts, the Buddha had once retired in disgust to avoid his quarrelsome followers, and where he was fed with honey by monkeys. One of the two pillars erected here by Asoka is still *in situ*; the other was removed in the Mogul period to the Allahabad fort. There are many other important Buddhist sites which have been excavated.

Among the Brahminical monuments which have been brought to light by excavation or otherwise discovered, the earliest so far recognized are remains of a stone enclosure wall, distant 8 miles from the well-known Chitorgarh hill in the Udaipur State. An inscription of about 250 B.C. described this as having been the enclosure wall erected in honour of Sankarshana and Krishna, the cowherd god of Mathura. Next in date is



CARVED STONE FIGURES ON THE EXTERIOR OF CAVE 19 AT AJANTA

The sculptures and paintings at Ajanta cover a long period in the history of Indian art. They date from about the second century B.C. to the seventh century A.D.

Photo Indian State Railways

the Garuda standard of Heliodoros, an ambassador of the Indo Greek king, Antialkidas, to the court of Bhagabhadra, king of Vidisa, modern Besnagar in the Gwalior State. Pushyamitra, the founder of the Sunga Dynasty (circa 185 B.C.), has left a valuable inscription at Ayodhya which provides epigraphical proof of the revival by him of the ancient rite of the horse sacrifice. Two *yupa* stones or sacrificial posts have similarly been found in the vicinity of Mathura. One of them is dated in the reign of the Kushan king, Vasishka, and records the performance of a long fast. The Gupta period (circa A.D. 350 to 600), which witnessed a great resuscitation of the ancient Brahminical institutions, has, strange as it may appear, left comparatively few buildings, though numerous sculptures in excellent style have been found at Sarnath and other places. The few Gupta buildings that have come down are one-chamber temples of stone slabs, with plain walls, both inside and out, and flat roofs, which have survived at Deogarh in the Jhansi district, Sanchi, and Bhumara in the Nagore State. The seventh century is noted for the long and prosperous reign of Harsha, an author of renown and a great patron of Buddhism, who held a

special assembly in honour of the Chinese pilgrim Hiuen Tsang in the year A.D. 643. The best examples of the North-Indian or Indo-Aryan style of architecture are the famous temples at Bhuvaneshvara, those at Khajuraho in Central India, Deogarh in the Jhansi district, and the Jama temples at Mount Abu, Girnar, etc. The Dravidian style which claims thousands of well-preserved monuments in the southern presidencies is distinguished from the North-Indian style in having a pyramidal tower in place of the curvilinear *sikhara*. Other distinctive features of this style are extensive open quadrangles around the main shrine, lofty *gopura* gateways, and the hundred and thousand-pillared halls that occur in these temples. It is probably these halls that were copied by the Mohammedan rulers in their palaces at Delhi, etc. See also ARCHÆOLOGY, Vol. I.

ARCHITECTURE. The two main themes of architecture in India are the Hindu and the Mohammedan.

In archaeological records the Hindu styles have by far the oldest examples, dating back several hundreds of years B.C. The following data, taken from Ramster Fletcher's *History of Architecture*, gives at a glance the

approximate dates of the various followings of Hindu Art—

The Buddhist Style, 250 B.C.—A.D. 750
North India, the Deccan, and Ceylon.

The Jain Style, A.D. 1000–1300, still
used all over India by the Jains.

The Brahmin Style, subdivided as
follows: Brahmin style of North India,
A.D. 600, and mostly used to the present
time.

The Chalukyan Style, Central India,
A.D. 1000–1300.

The Dravidian Style, South India,
A.D. 1300–1750.

The earliest examples of this great Art in India are the "chaityas" or temples hewn in solid rock at Bhaja (250 B.C.), Nassick (129 B.C.), Karli (78 B.C.), and the famous cave temples of Ellora, Ajanta, and Elephanta.

These are noted for the grandeur and boldness of their decorative carving, and at Ajanta are beautiful frescoes of immense value, which have recently been carefully preserved by Signor Cecconi, the well-known *restaurateur*.

From these ancient monasteries of holy men can be traced the religious following of Hindu architecture throughout the ages,

in the many beautiful examples of temples all over the country. A great feature of Indian architecture is the beauty at sunrise and sunset of the break in the skyline in even the humblest village, by the conical shaped spires of the Hindu temples and the graceful outline of the Mogul dome.

The Hindu style is found in many of the great palaces, forts, beautiful gardens and summer-houses, and artificial lakes and reservoirs enhance the beauty of many of these architectural gems.

Indo-Saracenic and Mogul Architecture. With the coming of the Indo-Saracenic and Mogul architecture, eighth to the fourteenth and seventeenth centuries, we pass through a period of invasions and wars: the creation of Rajputana, the land of "The Sons of Kings," here at Bikaner, Jaipur, Gwalior, Jodhpur, and Udaipur are most amazing buildings of granite and marble; forts and city gateways, palaces, garden summer-houses, and stately zenanas, even through the bazaar streets, ornate carved balconies and terraces screened with panels of jali work or perforated stone or marble.

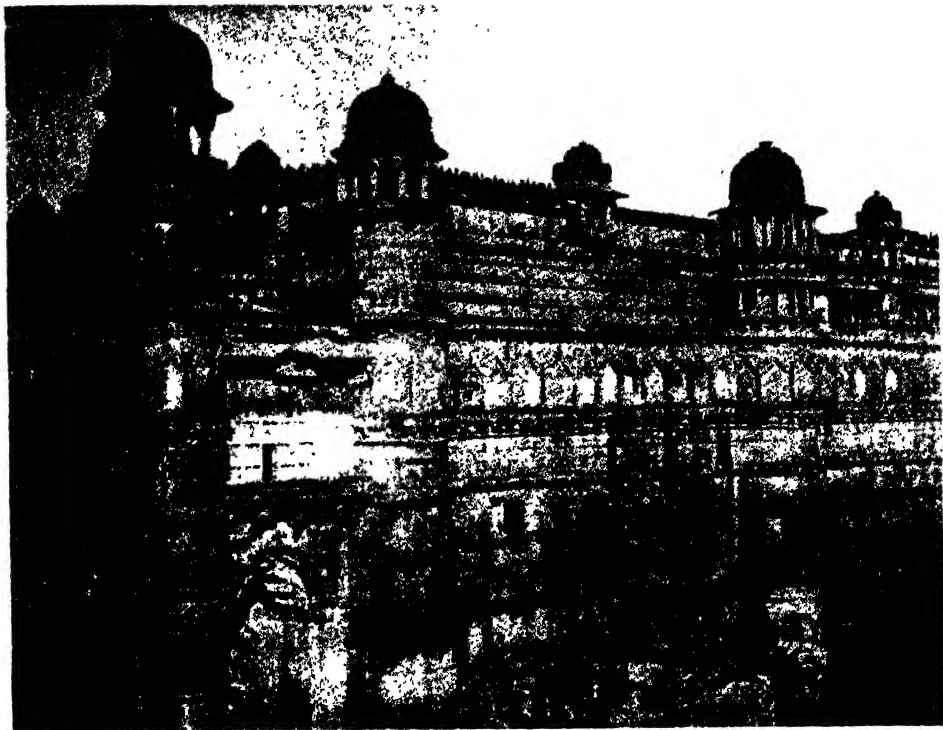
In the eleventh century came the massive buildings with gigantic proportions, the Pathan dynasty. And then from 1526–1761



TEMPLE OF JAGANNATH, PURI

Built in the twelfth century by Choda Ganda, it is a centre of pilgrimage and houses the great car of Jagannath.

Photo: Indian State Railways



GWAJIOR FORT

Built in the fifteenth century, it stands on a rocky eminence and at the time of its building was practically impregnable. Within its walls are five palaces and numerous temples

Photo K de B Codrington

the Mogul dynasty of the great Emperors, Akbar and Shah Jehan. The architecture of this period has surpassed all other styles of Eastern art, and by some is considered the most beautiful in the world. It totally differs from the Hindu styles which are mainly a mass of the most detailed elaborate carving, largely composed of the human form, various animals, and a profusion of symbolical decoration, executed with indomitable patience and devotion in hard stone and marble. This same devotion and patience is found in the workmanship of the Mohammedan buildings, those world-renowned gems of Mogul architecture, from the fifteenth to the seventeenth centuries.

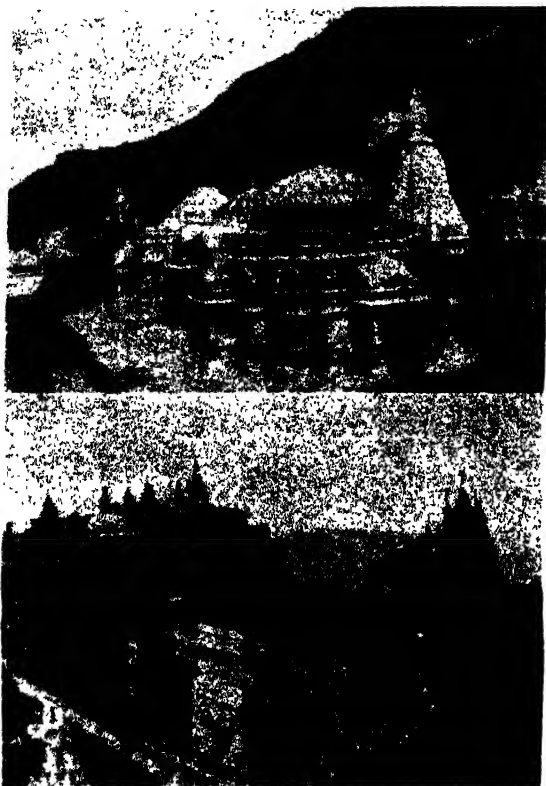
The Mausoleum of the Emperor Akbar, the Jumna Musjid, with its great dome 50 ft. in diameter at Bijapur, the great Mosque at Futtehpore Sikri and the Tomb of Selim Chistee, and the Kutb Minar, 238 ft. high; that wonderful old tower of ancient Delhi, and the amazing Fort at Agra in red sandstone. Then in the reign of the Emperor, Shah Jehan the Great, those works of superb magnificence, the great Mosque

and Palace at Delhi, the Pearl Mosque and the Dewan Khas, the Hall of Audience, and as a mausoleum to Shah Jehan himself and his Queen, that extraordinary dream in marble, the Taj Mahal, like soft music in the silver moonlight, a priceless jewel at the break of day and a haven of peaceful rest in the afterglow of the setting sun. These few words sum up the ethereal character of Mogul architecture.

India is rich in all classes of building material, marbles, granites of many colours, stone of many varieties, including the beautiful red Agra sandstone used all over India, also a hard shell lime stucco

The Moguls inlaid in precious stones and coloured plaster, their elaborate surface decorations of beautiful floral and geometrical designs, which were of endless variety of straight and curved lines of great beauty, intermixed with ornamentation consisting of inscriptions from the Koran, either in the old Kufic style or the later Italic lettering. Much of this decoration was highly coloured in rich reds, blues, greens, and gold.

Tracery work in perforated slabs of marble,



JAINA TEMPLES

Top: Junagadh Vastupola Temple, built 1114-1243
Bottom: Adeshwar Temple and Balahabas Temple on Satrunja Hill in Palitana State. Built between the twelfth and thirteenth centuries.

Photo: Indian State Railways

stone, or stucco, known as Jali work, of an almost lacelike delicacy, is largely used all over India as air-conditioning screens to arched openings and for veranda railings.

Throughout India, in many modern buildings, an Indian style of decoration is used at times with very pleasing results; there are, however, no examples of this architecture of outstanding merit in London, but for the student, a visit to the collection of Indian Architecture at the South Kensington Museum is well worth while.

Apart from the up-to-dateness of the buildings in the more important towns and cities, Bombay, Calcutta, Madras, etc., where reinforced concrete and reinforced brickwork were used largely in the early nineteen hundreds, the Bengal Club at Calcutta, built in 1907, was entirely reinforced concrete flooring and partition walls, and mainly steel construction.

These cities are celebrated for the splen-

dour of their public buildings, hotels, railway station, and of many of the private dwellings.

The three architectural works of outstanding importance of recent years are the All India Memorial to Queen Victoria, Calcutta, the building of New Delhi, and the building of Hyderabad of to-day.

The Victoria Memorial, Calcutta. Inaugurated by Lord Curzon, the Viceroy of India, and loyally subscribed to by all classes throughout India, this wonderful building of pure white marble is a worthy memorial to India's first Queen and Empress, Victoria.

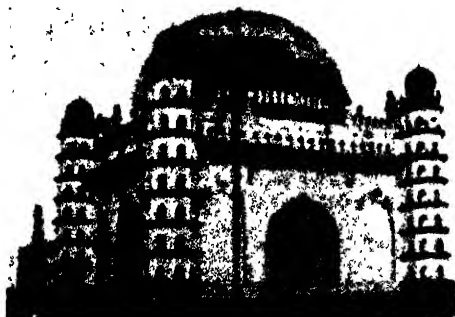
The original designs were prepared by Sir William Emerson; the responsibility of the construction and completion of this great work costing some £600,000, was in the hands of Mr. Vincent J. Esch, superintending architect to the Memorial Trustees.

The building is 430 ft. long by 300 ft. wide, and 200 ft. high to the top of the main dome, on the summit of which is a bronze statue of Victory, 22 ft. high. The central Queen's Hall has a diameter of 72 ft. and is 146 ft. in height.

The building is in pure white Indian marble from the same quarries at Makrana, Jodhpur, where marble was obtained for the Taj Mahal at Agra. The style of design is the purest classic with a refined suggestion of Indian character in the beautiful carved brackets to the main cornice, some of the floral decoration, and

the shape of the smaller domes.

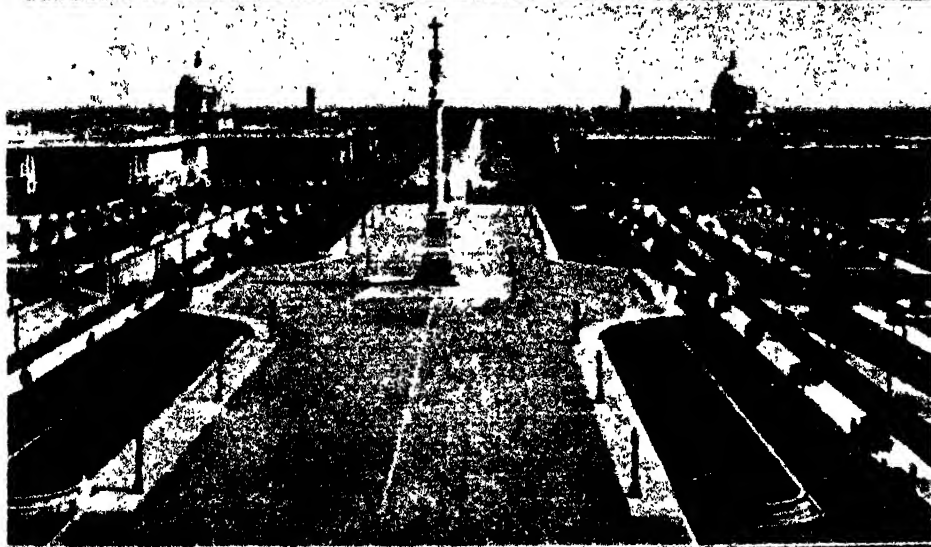
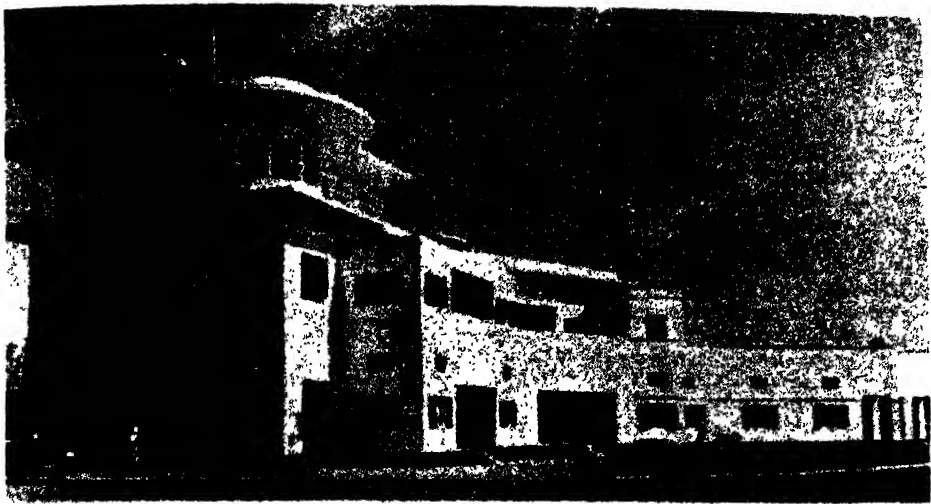
New Delhi. With the creation of the New Capital at Delhi, the centre of so much



CALGUMBAS TEMPLE, BIJAPUR

Built in 1636, it has the second largest dome in the world.

Photo: M.



MODERN ARCHITECTURE

Top: Air Station at New Delhi. Centre: General view of the Imperial Secretariat, New Delhi. Bottom: Osmania General Hospital, Hyderabad.

Photos: V. F. Fox, Fox, Indian State Railways

resplendent architectural history of the past, it was decided to choose for these important administrative buildings and living quarters, a Palladian Classic, that refined style of Italian Renaissance, introduced to England in the seventeenth century by Inigo Jones, and used very largely in much of British architecture in India.

So far the general layout consists of long stretches of fine roads, with gardens, court-yards, and fountains, and along these main avenues will be built the palaces of the various ruling princes of India, connecting up the vast blocks of Government Buildings that are the Secretariats, and the immense Council Chamber, designed by Sir Herbert Baker.

As a central feature, dominating all, is Sir Edwin Lutyens's Government House, the residence of His Excellency the Viceroy.

The more graceful and artistic motif of Indian style has been cleverly introduced throughout these buildings, such as the Chajja, that projecting stone slab in the cornice and over windows and openings, and much beautiful Jali work of pierced stone and marble.

Hyderabad of To-day. With the building of the great Gandipett Dam, the possibility of such another tragedy as the floods of the River Musi in 1908 have been stopped, the river has been harnessed by embankments of granite on either side. Beautiful Persian Gardens with playing fountains flank either side, and here have been built in the purest Mogul architecture, the magnificent High Courts of Justice, the City High School, and the Osmania General Hospital. These great buildings are constructed in that beautiful pinkish granite so plentiful in Hyderabad, and embellished with red sandstone from Agra.

ART. Understanding and appreciation of the art of a country depend principally on the degree of the observer's knowledge of the people of that country.

Man in India had always been attracted more to the spiritual than the material aspects of life. His religio-philosophical outlook permeated his whole life. His philosophy had taught him not to place complete faith in the material world as an ultimate reality, but to seek incessantly the Spirit that was in and beyond everything—the Infinite Cosmic Soul.

In art, as in everything else, he sought to express the spirit rather than the substance; thus to understand, and make comprehensible to others, the unity of God in the diversity of matter.

His aim and his philosophy of life made his art idealistic and symbolical rather than materialistically natural. The Silpa Shastras

(the art treatises) and the Puranas (mythological and speculative histories of the universe) not only laid down elaborate principles of art, such as differentiation of form, proportion, expression of emotion, depiction of charm, resemblance, use of tools and colours, but also enjoined that the artist should practise his vocation as a yoga—communion with his Creator. Art was his medium of attaining salvation.

One may trace the development of Indian art by reference and inference—reference to



SHIVA (NATARAJA)—BRONZE

This dates from between the tenth and twelfth centuries, A.D.

Photo Victoria and Albert Museum

various treatises on art, religion, and mythology; and inference from the relic-specimens discovered by archaeologists and research workers—from at least the Neolithic (New Stone) Age down to modern times. Crude wall-drawings and paintings of hunting scenes, whereby the artists had succeeded in conveying the agony of the hunted and the exultation of the hunters, have been discovered in the hill-caves of upper and central India. There are references in the Vedas and other religious compilations, as well as in the historical researches by Western scholars, that the Dravidians, the aboriginal people of India, were raising secular and religious structures of wood,

brick, and stone in the central and southern parts of the country at least about 10,000 B.C. These people had built up cults of phallic worship, of Nature spirits, and of mother goddesses. They possessed an elaborate pantheon, and cultivated several industrial arts and crafts. The recent discoveries

at Mohenjodaro, Harappa, and other places in the Indus valley of north-western India, indicate that the people of the Indus civilization of about 6000 B.C. were a cultured race, with expert knowledge of architecture, sanitary engineering, pottery making, and arts and crafts (see *ARCHAEOLOGY* Volume IX, page 5033).

The figurine of a dancing girl in copper, the bull-engraved seals, the sculptured bust in stone, the earthen female figure, the



DANCING GIRL IN COPPER
Mohenjodaro, sixth-fifth
Mill B.C.

painted vases, the pieces of printed textile—all these may justifiably encourage one to conclude that these people were not ignorant of the arts of dancing, music, sculpture, painting, jewellery-making, etc.

The actual link between and relationship of the people of the Indus civilization and the horde of nomadic Aryans who descended

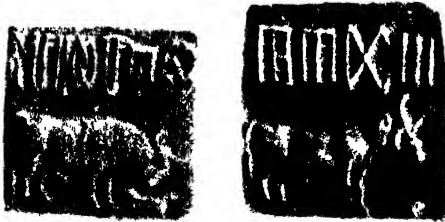
These new-comers, speaking a language which was the father of the Sanskrit language, brought with them a simple, sacrificial, austere monotheistic faith. They were expert carpenters, and built houses and chariots of wood. They were not ignorant of, nor inefficient in, decorating their handiwork. Descriptions of the construction and carvings of their sacrificial altars and posts, contained in the Vedas, clearly indicate the origin of the elaborate ornamentation on the pillars and pilasters of the later Hindu



STONE ANJAL AND ELEPHANT CAPITAL AT
SANCHI

Sanchi, in Bhopal State, is one of the principal centres of Buddhist culture. It has been systematically explored

Photo Indian State Railways



BULL—ENGRAVED SEALS
Mohenjodaro, sixth-fifth Mill. B.C.

upon the plains of India from beyond the Himalayas some time between 6000 B.C. and 3000 B.C. are matters still to be decided. There is, however, not much dispute that all that is understood by Hindu culture had its beginning at least in the advent of these nomads from beyond the snow-crowned ranges

temples. Further, the Aryans were proficient as goldsmiths (jewellery and statuettes), metal-workers (copper vessels for domestic and ritual uses), weavers of decorative cloths, tanners, and pottery-makers.

In the fusion of the austere and symbolical faith of these Aryan people, and the polytheistic and intensely human cults of the aboriginal Dravidians, was the birth of the mystic and devotional religion of the Hindus. And this religion was the fountain of Hindu culture, fine arts, literature, science, music, dancing, mythology—in short, the philosophy of life of the Hindus.

Through several centuries of progress, after the birth of the Vedic philosophy, the Hindus gradually developed their conception and technique of art which were consistent with their view-point of life. Their art-anatomy was idealistic like their philosophy—an ideal anatomy that the mind conceived, after careful observations of all the physiological truths around them, rather

than what only the eyes saw. The ideal of manhood to them was not so much in the muscular development of a male body as in the sense of inherent strength and bravery. In the art-treatises of the Hindus a man is described as having a lion-like body, arms like the body of a serpent or the trunk of an elephant—symbolical of fearlessness,

newly-conceived life. The artist did not neglect his careful study of other forms of life, animal and vegetable.

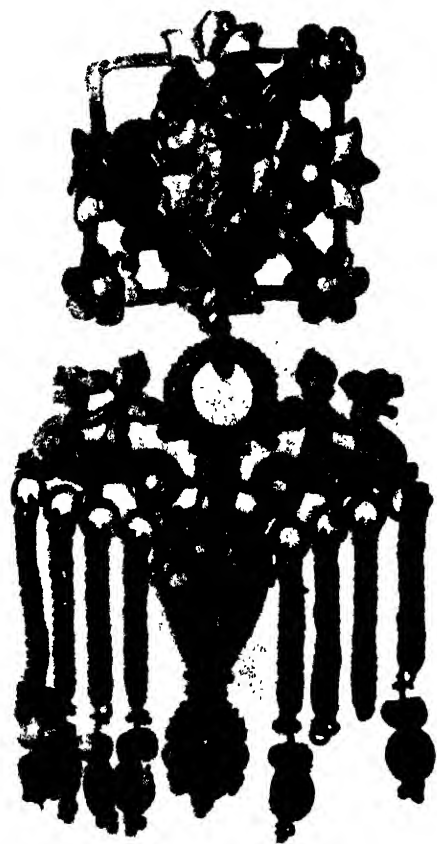
In the field of perspective the Indian artist had observed and developed the technique of line-drawing, instead of perspective through inter-play of colours and of light and shade. In fact, it is universally acknowledged that the genius of not only Indian, but all Asiatic, art lies in its supreme mastery over line-drawing. The sureness, delicacy, subtlety, expressiveness, and strength of line-drawing may be considered India's contribution to the fine arts of the world. Another technical factor, which is prominent throughout the whole history of painting in India, is the use of water-colour as the principal medium.

All these developments in conception and technique find the first period of their culmination in the sculptured gateway at Sanchi, the relief-sculptures on the stone railings at Barhut, and the fresco-paintings at Ajanta—paintings on the walls of the temples and monasteries which were carved out of a great cliff extending like a horse-shoe. These sculptures and paintings occupy a long period in the history of Indian art, dating from about the second century B.C. to about the seventh century A.D., which may be termed as the classical period.

During the period of Vedic Hinduism (i.e. from about 2000 B.C. to about 500 B.C.), art thrived under religious patronage, and was mainly devotional in nature. Towards the end of the fifth century B.C., Buddha turned from the ritualistic morass into which Hinduism had sunk and preached his faith of simplicity, austerity, and monasticism. About three centuries later, Asoka, one of the first of the imperial rulers of India and a follower of Buddhism, became the first royal proselytizer. Under his imperial patronage, sculpture and painting flourished throughout the length and breadth of India in the wake of the propagation of Buddhism.

This is usually regarded as the beginning of the Buddhist period in Indian art, which was devotional, austere, and narrative in character. After Asoka's death, Buddhism lost much of its austerity and the slow process of its assimilation by the intense devotionism of the Hindus began. This power of assimilation of all new or foreign ideas and culture, which finally makes them her own, is one of the most peculiar characteristics of India which is evident throughout the long history of her art.

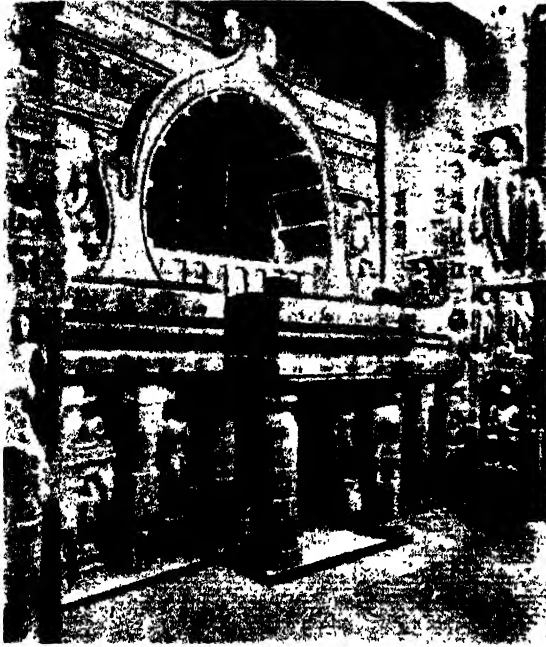
This impetus of devotionism, however, gave the required stimulus and fired the creative impulse of the Buddhist and Brahminical (i.e. those who still followed the ancient Vedic religion) artists, whose sculp-



GOLDEN EAR PENDANT

Found at Taxila, near Rawalpindi, one of the principal centres of Buddhist culture, it dates from about the fifth century B.C.

bravery, and immense strength. The ideal of womanhood was in her soft suppleness, her greatest glory in her motherhood wherein she fulfilled her purpose in life. The minute details of description of feminine figure study are copious. Among them the main features are full roundness of breasts (indicative of sustenance of life), swaying slenderness of waist for suppleness, softly moulded straightness of stomach (expressive of the erotic attraction of forces of Nature over matter), and the broadness of hips as sanctuary to



ENTRANCE TO CAVE 19 AT AJANTA

The temples and monasteries at Ajanta were carved out of a great cliff extending like a horseshoe.

Photo: Indian State Railways

tures and paintings at Amaravati, Ajanta, and other places are eloquent witnesses of the genius of those who wrought them.

The paintings at Ajanta depict the Jatakas or stories relating the various incarnations of the Buddha. Several generations of artists painted life in all its aspects—devotional, erotic, natural, and sublime—on the walls of these rock-caves with such single-minded aim and devotion that, apart from any consideration of their technical perfection, these paintings are remarkable as a masterpiece of continuity. The Andhras ruled in the neighbourhood of the caves, the Indo-Greek (Gandhara) form of art (about A.D. 65–225) came and left its impress, the Gupta dynasty rose and declined (A.D. 320–650), Buddhism itself gradually lost its hold in the land of its birth, and finally vanished about the seventh century A.D. to flourish in far-away lands (China, Ceylon, Java, etc.); but the artists of Ajanta went on painting and sculpting, recording the kaleidoscope of political, social, and artistic changes of nine centuries or more, yet preserving a continuity of thought and execution. The Ajanta frescoes, and a few paintings in the Bagh caves in Gwalior State of a later period, remain the only specimens of the art of painting of the classical period. There are also some Buddhist

frescoes at Sigiriya in Ceylon (about the last quarter of the fifth century A.D.), and wall-paintings at Sittanavasal in Pudukottai State, in the Badami caves in Bijapur District, and in the Jogimara caves in the Ramgarh hills in Orissa. More or less simultaneously with Buddhism the creed of Mahaveera Jina, known as Jainism and also born as a protest against the ritual-ridden state of Hinduism, flourished in this land of religions. This faith, too, like Buddhism in its earlier stage, was austere and intellectual. The art world of the Jinas was consequently narrow, being expressed at first in a few stereotyped statues of the prophets. Gradually, as austerity wore down through centuries of contact with the assimilating genius of the Hindu devotionalism, Jaina art found expression in a riot of imaginative skill through the medium of architectural decoration—one of the finest of which can be seen in the Jaina shrine of early eleventh century A.D. on Mount Abu in Rajputana. The decorative artistry of the vaulted roof of the shrine alone would justify a place of honour to Jaina art in the history of India's culture.

Sculpture has a more comprehensive story over a much longer period, from at least the sixth century B.C. to the thirteenth century A.D., perhaps because the medium (stone) is more durable.



MOTHER AND CHILD

Fresco painting at Ajanta. The paintings in these caves, and a few of later date in Gwalior State, remain the only examples of the art of painting of the classical period.

Photo: Indian State Railways

The Parkham statue of the sixth century B.C.; the charm of the stone dryad on the gateway and the consummate skill of the reliefs on the stone rails at Sanchi of the first two centuries before the advent of

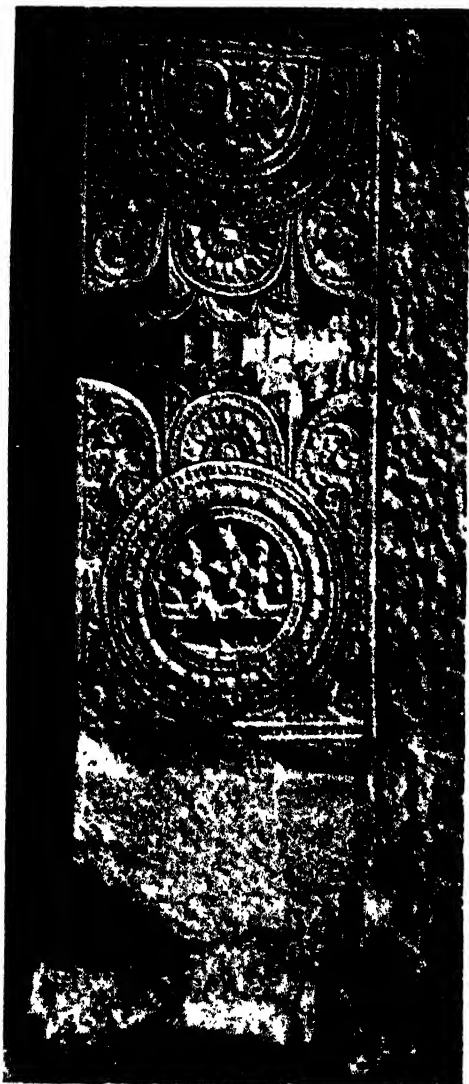
turies A.D.; the beauty of the lion capitals and other sculptured relics of the fifth century A.D. discovered at Sarnath, near Benares, the symmetry and decorative craftsmanship of the sculptured pillars, capitals, stupas, and wall-reliefs of the Ajanta caves dating from about the second century B.C. to about the seventh century A.D.; the grandeur of the Kailasha temple and the lyrical fluency of other sculptural and architectural achievements at Ellora and Elephanta caves (approximately of the eighth century A.D.); the rhythm and detailed workmanship of the statues of mythological gods (specimens in the British Museum) of the eighth to eleventh centuries A.D., the southern Indian sculptural and architectural art (as evidenced in the glories of the Tanjore temple) from tenth to twelfth centuries A.D.; the sublimity and eroticism of the sculptures and temple architecture of the thirteenth century A.D. depicted through the temple at Konarak in Orissa—all jointly make of India a veritable museum for the study of its art.

Neither the religion nor the art of India was confined within the geographical limits of the country. The influence of Indian painting in the development of Chinese and Japanese painting is well known and acknowledged. Hindu mythology and epic, and Buddhist Jataka stories, were painted and sculptured in the caves, and on the temples of Ceylon, Java, and other lands.

With the advent of the Mohammedans towards the end of the twelfth century A.D., there came a lull in the artistic fertility of India so far as painting and sculpture were concerned; but they brought to the land of their adoption a new richness, beauty, and aesthetic sense in the art of architecture. See ARCHITECTURE, Vol. IX, page 5037.

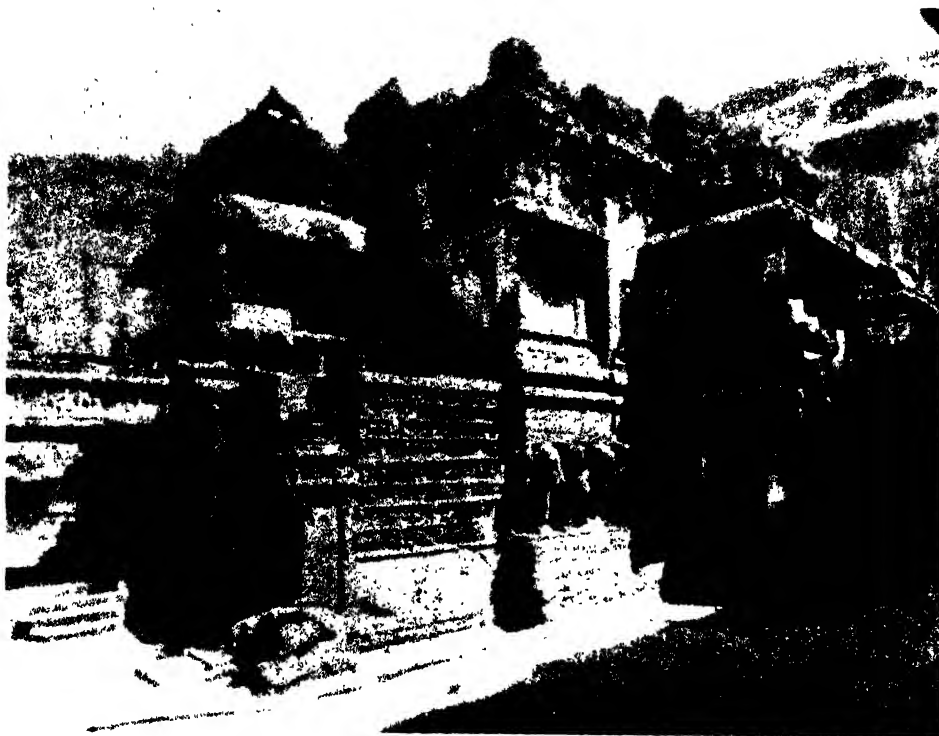
For nearly three and a half centuries up to the beginning of the sixteenth century A.D., wars, conquests, and political reconstitution held the centre of the stage in India; but the fine arts, though moribund, were by no means dead. With the establishment of the Mogul Dynasty on the throne of Delhi and a fairly settled state of affairs in general, a new life was breathed into the artistic genius of the country, and the school of Indian art known as the Mogul School came into being. Akbar the Great was the most notable patron of this school in the field of painting, and his grandson, Shah Jehan, was the greatest benefactor in the realm of architecture.

During this period (from the end of the twelfth century A.D. to the sixteenth century A.D.) the genius for adaptability of the land was not wholly inactive and, by the time the cultured monarchs of the Mogul dynasty assumed the reins of India's destiny,



CARVED STONE PILLAR AT CAVE 24, AJANTA
Photo: Indian State Railways

Christ; the plasticity and sense of decorative design of the reliefs and carvings on the stone slabs of Amaravati (which can be seen in the British Museum) dating from about the second century A.D.; the prolific sculptural art of the Indo-Greek School of Gandhara between the first and fourth cen-



KAILASHA TEMPLE AT ELLORA

The sculptural work dates approximately from the eighth century A.D.

Photo. Indian State Railways

the fierceness of this new faith had mellowed considerably, though its singleness of purpose and abundant vitality remained. Sculpture, except as a minor adjunct to the art of architecture, was more or less ignored. But the art of painting flourished under imperial patronage. Completely secular in aim, it excelled in portraiture, romantic themes of love, war and chivalry, in historical records of imperial achievements, and in lyrical but truthful representation of animal life. The genius of the master artists, from Persia and Hindustan, in the Imperial Court, like Hunhar, Manohar, Nanha, Bishan Das, to name a few, delineated the characters of the subjects of portraiture and imparted an astonishing rhythm of movement in their animal studies. Mogul art was the combined product of the Persian and Hindu genius influenced by the eclectic and highly refined culture of the Mogul Court. The



MAMMOTH STONE FIGURES AT ELLORA
Indian State Railways

supreme delicacy of line, the soft harmony of colours, the fineness of details stand out as some of the principal features of this school. While Mogul art flourished at the Court at Delhi, in the Hindu vassal courts of Rajputana and the Kangra Valley at the foot of the Himalayas, flourished simultaneously the Rajput school of painting, utilizing the technique brought from the school of Delhi, to give expression to the devotional sentiments of the people which had lain dormant for 300 years. In this brother school perhaps the lines were not so delicate, the colours not so soft and refined; but the themes spoke of devotion, of folk-lore, of the love and life of Shree Krishna—the Divine Shepherd. In its secular character it visualized music in symbolic forms and depicted the characters and qualities of melodies.

The Mogul School and the Rajput School were short-lived: beginning about the middle of the sixteenth century A.D., they declined in the nineteenth century A.D. Aurangzebe, the last great emperor of the Mogul dynasty, frowned upon the fine arts. With his death in A.D. 1707, political turmoil again became the order of the day. For over a century the Marathas, the Portuguese, the French, and the British struggled for the throne of Delhi and the empire of India until, in 1818, Britain achieved paramountcy. Direct government of the country by the British Crown began less than a century ago in A.D. 1858. The uncertainty and confusion, the loss of patronage, the spectre of death, and lawlessness could hardly stimulate any artistic achievements.

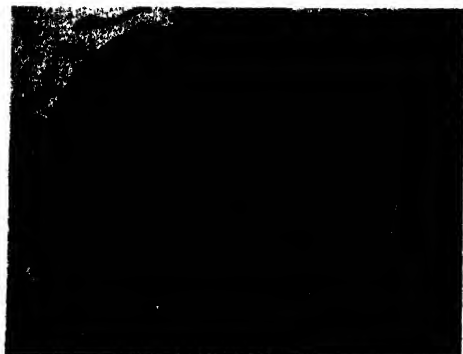
Towards the latter end of the nineteenth century A.D. there arose an artist in the south of India by the name of Ravi Varma, who, influenced by the work of a British artist, painted pictures on mythological and secular subjects, some of which were exhibited in the Indian and Colonial Exhibi-



LOTUS GIRL

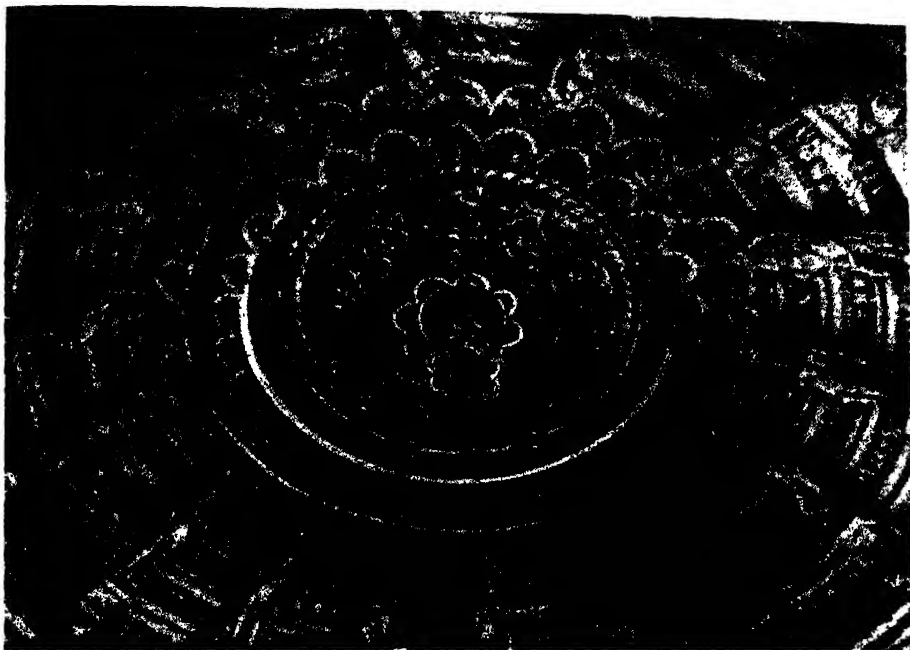
A painting by S.S. Choudhury.

tion in London and in the International Exhibition in Chicago. Lithographic copies of his paintings, especially of the mythological deities, fulfilled the hunger of devotional urge of the people that was slowly emerging again with the establishment of settled conditions. His work also stimulated the art-consciousness both of the government and of the people. Art schools were established. The modern period of Indian art came into being. Early in the present century there occurred a schism in the view-point of the artistic aim of India. In the Western part of India grew the view that in consonance with the modern conditions and requirements of life the artistic genius of the land should be developed along cultural and utilitarian lines. In the East, the people advocated a cultural and idealistic aim—a renaissance of the classical art of India. Some said that, along with the growth of a new India—politically, economically, and socially—there should be a new art form to reflect this new idealism. Others said that the artistic glory of ancient India should be resuscitated and the new India should breathe life into it. Thus two schools of art have come into existence in India—the Bombay School of



WATER BUFFALOES FIGHTING

A painting of the Rajput school.



WHITE MARBLE DOME AT DILWARA TEMPLE, MOUNT ABU, RAJPUTANA

The decorative artistry of the vaulted roof of this shrine, of the early eleventh century A.D., alone would justify a place of honour to Jaina art in the history of India's culture.

Photo: Indian State Railways



CARVED STONE WHEEL AT THE TEMPLE AT KONARAK, ORISSA

This temple dates from about the thirteenth century A.D.

Photo: Indian State Railways



ON THE WAY

This and "Lotus Girl" (page 5048) are paintings by S. S. Choudhury, one of the Indian artists whose work has been strongly influenced by the modern art schools.

the west and the Bengal School in the east

In the works of both the schools, devotionism, which seems to be the very life of India, is more or less the principal source of inspiration and decorative drawing the most natural form of execution, though secular and narrative subjects form the bulk of production.

On the walls of the State buildings of the Government of India, at New Delhi, youthful exponents of the Bombay School have executed several mural paintings (depicting the arts, e.g. architecture, music, dancing, painting, sculpture, poetry, etc.) of charming colours, decorative designs, and vibrant qualities. Artists like Deushkar, Kelkar, Kamat, and others have established their reputation in London, on the Continent, and in India. While artists like A. N. Tagore, G. N. Tagore, Nandalal Bose, Asit Haldar of the Bengal School, with their experimental excursions in European and Far Eastern techniques adapted to pure Indian feeling and atmosphere, their gorgeous colours and intricate patterns, strong lines and bold compositions, their rhythm and sense of movement have revived the beauties of the Ajantā and other glories of the classical period, and have already set the art of that school high in the appreciation of many connoisseurs.

ASSAM. See article, Vol. I

BANERJI, DR. SIR GURUDAS (1844-1918)

Born in Calcutta of a Brahmin family of limited means, he was a man of versatile genius. He was a deep and critical scholar in English, Bengali and Sanskrit literature, in mathematics, in Eastern and Western philosophy, in law, and in the lore of his own religion. He was the first Indian Vice-Chancellor of Calcutta University, and his Vice-Chancellorship was marked by a momentous change in the constitution of the University. He was appointed a member of the Indian Universities Commission in 1902.

Sir Gurudas was a lawyer by profession and was a Judge of the Calcutta High Court for fourteen years.

BANERJI, SIR SURENDRA NATH (1848-1925). Born in Calcutta of Hindu parents,

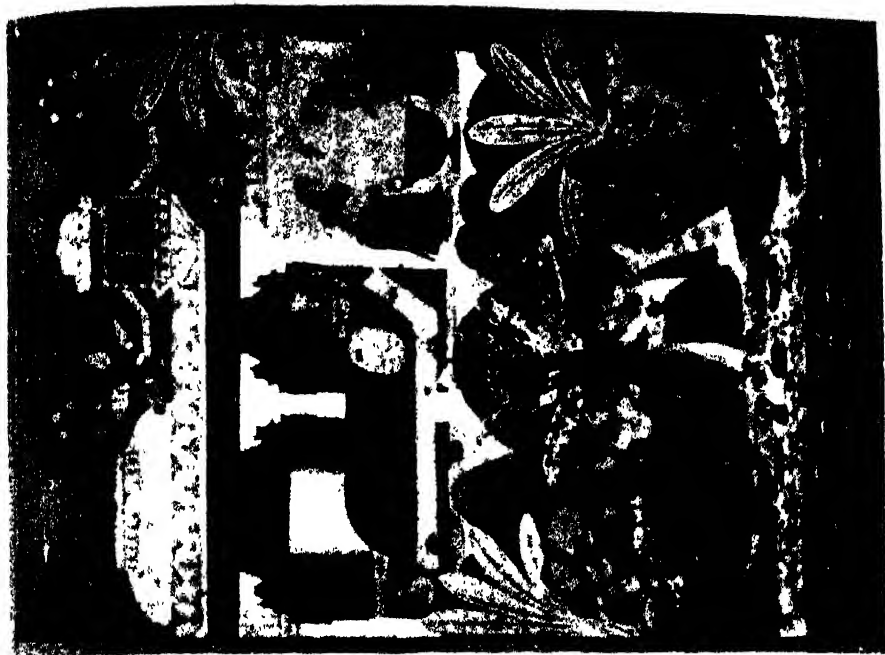
he was educated first in Calcutta and later at University College, London. He entered the Indian Civil Service through open competition, but his career in the service was short. He then directed his attention to education, journalism, and public life.

In 1876 Banerji was instrumental in establishing the Indian Association, a political body. Some ten years later came the Indian National Congress, of which he was one of the most prominent figures from its inception up to the time when it passed into the hands of the extremists.



LADY HAWKING

An eighteenth century painting of the Ming'lad school.
The subject may have been Chhatra Babu, Queen of
Bhopal



VASANTIA RAGINI

Krishna and the Gopis milkmaids at a Spring Festival
An early seventeenth century painting of the Ratan
school

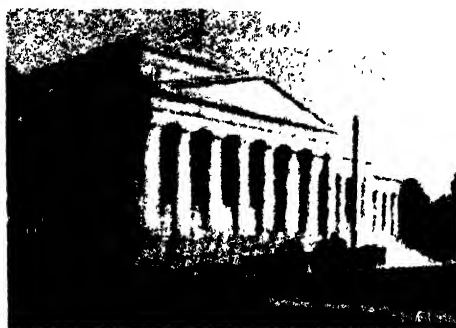
Banerji played a most important part in the agitation against the Partition of Bengal by Lord Curzon in 1904. He denounced it from public platforms and through his own organ, *The Bengali*. Moreover, the part he took in the *Swadeshi* (country goods) and boycott movements were in the highest degree embarrassing to authority.

The modification of the Partition of Bengal allowed him to be milder in words and deeds, and he slowly moved towards co-operation with the Government. When the Montague-Chelmsford reforms were inaugurated, he accepted for three years the senior Ministership in the Bengal Government, taking the Local Self-Government portfolio. His outstanding achievement was the Calcutta Municipal Act.

In addition to his political labours, he was Professor of English Literature at Ripon College for nearly fifty years.

BANKING AND FINANCE. The structure of public finance in every country is bound to be in large measure moulded and controlled by economic and social conditions. In India, as the Simon Commission reported in 1930, the more prominent factors are the country's predominantly rural character, its isolated villages, and the dependence of the vast majority of the people upon agriculture; the low standard of living of the masses and their poverty; and the long tradition of centralized administration which has so profoundly affected the nature of its fiscal arrangements. Although the transfer of British India to the Crown in 1858 was not followed immediately by any diminution in this centralized control, the financial history of the next sixty years witnessed a steady growth of the financial authority of the Provincial Governments by a gradual devolution of powers to them from the Central Government. Financial settlements with them began to assume a quasi-permanent character, and the Montague-Chelmsford Reforms carried the process of financial devolution a long stage further. The idea underlying the new scheme was that an estimate should first be made of the scale of expenditure required for the upkeep of the Central Departments; that resources to meet these commitments should be secured to the Central Government; and that all other revenues should then be handed over to the Provincial Governments, which henceforth would be held wholly responsible for all provincial services. The complicated task of evolving a detailed scheme, was referred to a Committee presided over by Lord Meston, a former Finance Member of the Government of India, which fixed the contributions to be made by the Provinces to meet the temporary deficit

in Central revenues created by the new division of financial resources. These levies, though temporarily unavoidable, proved a source of political, as well as financial, embarrassment to the new Provincial Governments, and, as authoritatively acknowledged, "formed one of the main obstacles to the success of the Reforms" (Reforms Enquiry Committee, 1924). The substantial initial surpluses which it had been hoped would be available to the new Provincial Governments for the extension of the popular "nation building services" entrusted to Indian Ministers failed to materialize. Instead, an acute financial crisis, not confined to India, forced the Central and Provincial Governments



THE MINT, CALCUTTA
Photo. Indian State Railways

into policies necessitating concurrently heavy additional taxation and retrenchment in the directions in which larger outlay was most keenly desired, and would have been most beneficial, and it was not until 1927-28, owing to the intervening recovery in the economic and financial situation, that the provincial contributions to Central revenues were finally extinguished. Unfortunately, the recovery was short-lived. Not only, as subsequent experience revealed, were Provincial contributions abandoned before Central resources were fully adequate to bear the strain; the onset of the world depression was accompanied in India by a period of political stress and strain which combined to create financial problems of extraordinary magnitude and complexity. Justifying the imposition, in his Budget for 1930-31, of new taxation aggregating five crores (for table showing relative values of lakh and crore see page 5079) of rupees, the Finance Member pointed out that certain heads of revenue were declining, notably that from opium, which was to disappear entirely after 1935. New needs for expenditure, were constantly arising. Yet another consideration was that Government had, in

his opinion, been working during the preceding three years on dangerously narrow margins, and that in a country like India, subject to great risks of loss of revenue from failure of rains or from floods, it was desirable to have some margin of revenue over expenditure from which a reserve could be built up in good years.

By 1931-32, India, in common with the rest of the world, was experiencing the financial difficulties incidental to "one of the worst industrial and trade depressions in history." Between September, 1929, and December, 1930, the fall in the price-level of the primary products, of which Indian exports mainly consisted, was 36 per cent; import values declining concurrently by only 16 per cent. Simultaneously, internal trade, as described by the Finance Member, "suffered disastrously as a result of political disturbances. Unnecessary losses to private traders must have been very great, while enormous sums of money must have been diverted from productive purposes." By 1932-33, Indian exports and imports had fallen in value to a bare half of what they were two years previously, the Finance Member observing: "These are staggering figures, and indicate the extent to which our present difficulties are due to world conditions."

Between 1928-29 and 1933-34, according to an official calculation, the value of the total production of the principal Indian crops fell by 547 crores, or 53.6 per cent, while the value of India's total trade in merchandise, excluding re-exports, fell from 450 to 388 crores, these figures indicating the unstable economic foundation despite which budgetary stability has been maintained. If India has been able, notwithstanding the cataclysmic decline in commodity prices and in the value of her oversea

trade, to balance her budget and meet her external obligations without undue strain, a major factor has undoubtedly been her readiness to draw upon, and export, a large percentage of the gold, valued at 700 crores, imported during the thirty years preceding the advent of the world crisis.

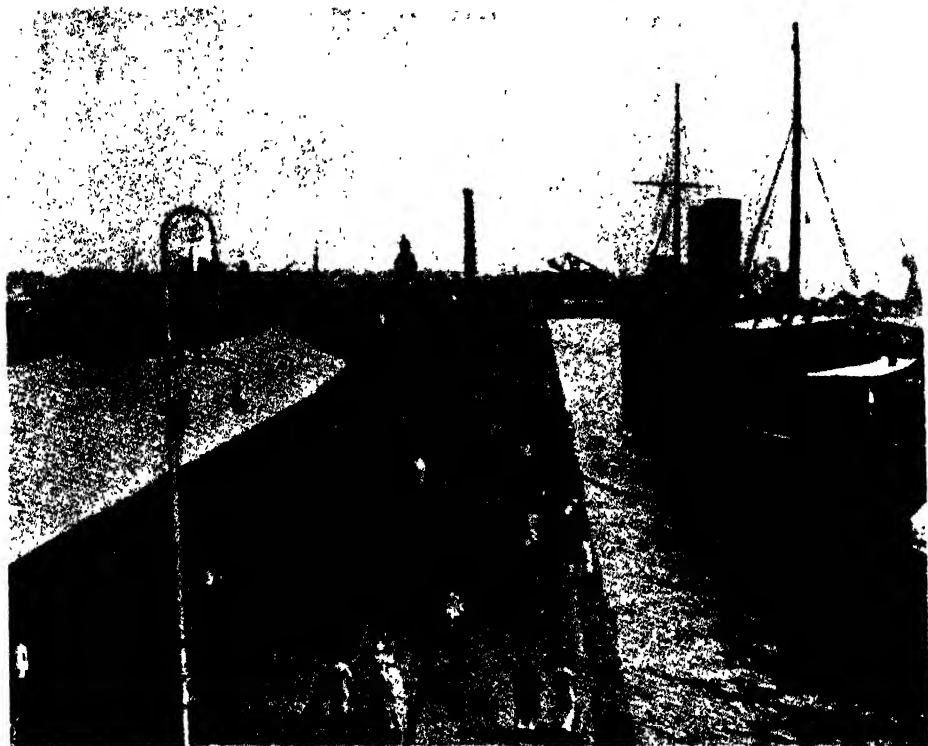
By 1935-36 a substantial surplus was available for allocation to various development projects, and the Viceroy, noting various indications of a gradual movement towards economic recovery in India, was able to claim that "the steady decline in the general level of prices which commenced in the latter part of 1929 has now definitely ceased, and an upward tendency appears to have set in. There is evidence, also, that the disparity between the prices of agricultural and of manufactured commodities, which has so seriously affected the purchasing power of the people of India, is now less marked than before, and that a more balanced price relationship is probably within sight."

Nevertheless, it would be premature to regard Indian finance and credit as having emerged finally from the jungle of difficulties, for while taxable capacity in India is low, and the market value of her exportable produce has rarely if ever been lower, her external obligations run to nearly £40,000,000 a year, and in order to maintain an even position she requires a favourable trade balance of approximately that amount. Moreover, new strains are being imposed upon her Central Government by the necessity, imposed by the Constitutional Reforms, of allotting substantial additional revenues to the new Provincial Governments. Yet Sir Otto Niemeyer, after full investigation, takes the view that these new obligations can be faced, subject to the reservation that "the scope in the next few years for



GENERAL POST OFFICE, BOMBAY

Photo: Indian State Railways



MAIL BOAT AND IMPERIAL INDIAN MAIL AT THE MOLE STATION ON BALLARD PIER, BOMBAY

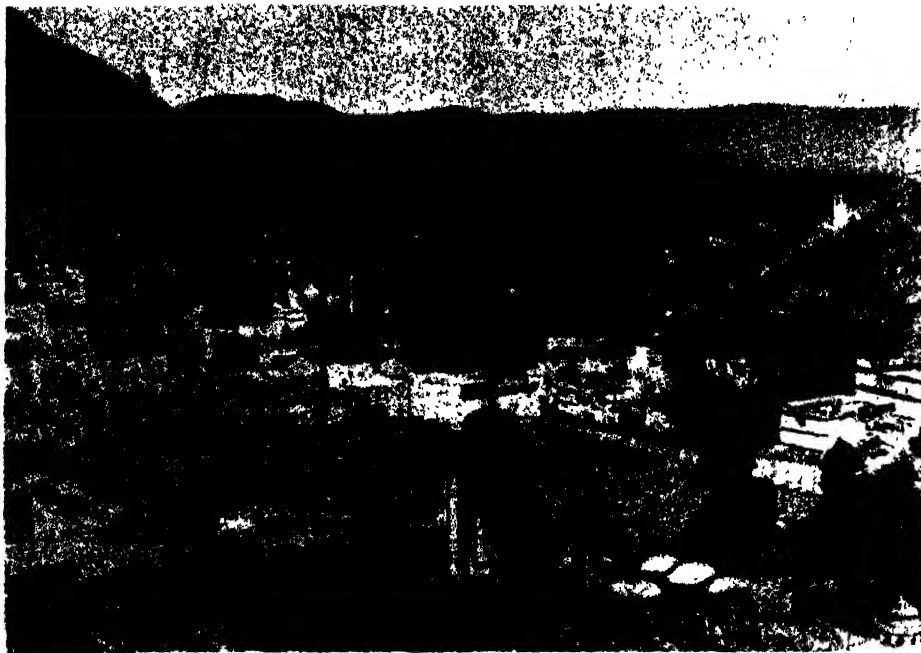
Photo Indian State Railways

relaxation of revenue burdens is likely to be extremely small unless economic improvement takes place at a rate well in excess of what can now safely be assumed."

Much also depends on the position of Indian railway finances which Sir Otto describes as "frankly disquieting," the Government of India finding themselves in such complete accord with this view as to insist that "unless their solvency on the basis of a full commercial accounting system can be restored, and that before very long," the revenue allotments envisaged by Sir Otto Niemeyer "will be quite impossible of execution." Of possibly even more enduring significance is the opinion expressed by the Government of India that: "As regards Customs, the general level of the tariff is now so high that the maintenance of the aggregate yield, which is by far the most important single factor in the whole revenue position, has become a somewhat precarious task. There is plainly no further reserve which could now be drawn upon to meet an emergency, as was done twice in 1931, and any serious relapse in the value of India's import trade would inflict damage which

would be beyond the remedy of a mere increase in the tariff. Even if we exclude a further deterioration in the conditions of internal trade, the present pitch, even of revenue duties, is itself liable to provoke regressive tendencies. The Government of India, therefore, consider that any material increase in the tariff will endanger the practicability of the plan; they conceive, in fact, that in order to conserve the revenue yield it will be necessary from time to time to propose reductions of particular duties."

There has been a steep decline in Indian revenues, also a vital factor in Central finances, which, according to official analysis, is also traceable largely to the present trade situation. During the period of prosperity, 1924-25 to 1929-30, Indian railways met all their liabilities, and, in addition, including 1930-31 (when reserves were drawn upon), contributed 42 crores to general revenues. Since 1930-31 the railways have made no contributions to general revenues, and have only been able to meet working expenses and interest charges by borrowings from the depreciation fund. This deterioration is ascribed to three main factors: (a)



AMBER, A CITY OF RAJPUTANA

Photo: Indian State Railways

world depression and general collapse of commodity prices; (b) the striving after self-sufficiency by almost every country in the world, including India, and development of internal trade and production; (c) increase of motor competition, and, to a lesser degree, river and sea competition; and, to some extent, also to labour legislation, and improvement in service conditions of staffs. As the Government of India view the position, "it is quite clear that till world conditions improve and there is a general rise in the prices of commodities, there is little, if any, prospect of railways regaining the greater part of the traffic they have lost on this account." Measures of economy and efficiency within India's own competence, notably the closer co-ordination of road and rail traffic, were towards the end of 1936 referred for investigation to an expert committee headed by Sir Ralph Wedgwood.

In this brief and unavoidably inadequate survey of Indian finance, many major factors, both on the revenue and expenditure side, have necessarily been neglected, including the high percentage (approximately 50 per cent) of Central revenues absorbed by defence, the unusually high percentage of the public debt which is balanced by such productive assets (normally) as railways and irrigation works, the yearly capital

expenditure on such public utility works, now sharply curtailed, and other aspects equally important. Nor has it been possible to deal with exchange problems.

As from 1st April, 1935, the newly-established Reserve Bank of India took over the management of the Currency Department of the Government of India by the creation of a special Issue Department, undertaking the duties of selling Treasury Bills on behalf of Government and of supplying the Secretary of State with his sterling requirements from the same date. The assets of the Gold Standard Reserve were transferred to the Bank and were combined with the assets of the Currency Department. The Banking Department was opened in the following July, and the scheduled banks deposited the required percentage of their demand and time liabilities, the Clearing House being transferred from the Imperial Bank of India at the same time. A central bank in the fullest sense of the term, the Reserve Bank provides the usual rediscount facilities and fixes the Bank rate. The Imperial Bank of India, which ranks next in importance, and represents an amalgamation of the former Presidency banks, acts in many centres as the agent of the Reserve Bank, and, since the establishment of the latter, has been

freed from the legislative restrictions which previously precluded it from competing for exchange bank business. External trade is financed mainly by banks under British control; the first exchange bank under Indian control, the Central Exchange Bank of India, a subsidiary of the Central Bank of India, having been established with an office in London as recently as September, 1936. In 1934, the latest year for which statistics are available, there were 105 joint stock banks in India with paid-up capital and reserves of at least one lakh of rupees (£7500). The Imperial Bank of India is credited with three head offices and 160 branches; the exchange banks, whose head offices are outside India, with 98 branches; and Indian joint stock banks with 320 head offices and 688 branches. The respective shares in the total deposits in 1934 were: Imperial Bank of India, 35 per cent; exchange banks, 30 per cent (deposits in India only); and Indian joint stock banks, 35 per cent.

Total bank deposits amount to about £180,000,000, a relatively small total in a country containing a population now estimated at 370,000,000. That the low level of bank deposits in India is due, not only to lack of banking facilities but to poverty, may be inferred from the calculation of the Indian Central Banking Committee in 1931, that the average income of an agriculturist in British India only slightly exceeds the rupee equivalent of £3 a year.

BANYAN. See article, Vol. I.

BARODA, MAHARAJAH OF. See Gaekwar, Vol IX page 5070.

BENGAL. See article, Vol. I.

BENGAL, BAY OF. See article, Vol. I.

BENGALI. See article, Vol. I.

BESANT, DR. (MRS) ANNIE (1847-1933). See article, Vol. I.

BHANDARKAR, DR SIR RAMAKRISHNA GOPAL (1837-1916). Sanskrit savant, reformer and revivalist. Dr. Bhandarkar was born of poor Maharashtra Brahmin parents at Malwan, in Bombay Presidency. He had a brilliant academic career. He was appointed Professor of Oriental Languages in Elphinstone College, Bombay. His published works included an *Early History of the Deccan* and his most important work, *Vaishnavism, Saivism and Minor Religious Sects*, which constitutes from the Indian point of view the most useful of the volumes of the series, *Encyclopaedia of Indo-Aryan Research*.

To commemorate the name and work of Sir Ramakrishna, the Bhandarkar Oriental Research Institute was started in his lifetime at Poona with the munificent aid of the late Sir Ratan Tata. It has a magnificent

collection of books and manuscripts, which it owes to the generosity of the Government and Sir R. G. Bhandarkar.

BHANG. See article, Vol. I.

BHOPAL. See article, Vol. I.

BHUTAN. See article, Vol. I.

BIHAR. See article, Vol. I.

BOBB, E. V. (born 1902). Bobb was ranked as India's leading lawn tennis player in 1936 by the All-India Lawn Tennis Association. Four times champion of India, he has represented his country in the Davis Cup competition. Bobb is Mohammedan, and was educated at Allahabad.

BOMBAY. City and Presidency. See articles, Vol. I.

BOSE, SIR JAGADISH CHANDR, F.R.S (born 1858). Indian scientist Bose was born in Dacca of a Hindu family. After graduating from Calcutta University, he went to England and took his B.Sc. degree from London University. He was appointed Professor of Physics in Calcutta Presidency College on his return to India. Publication of a series of his articles in scientific journals in 1895 brought about a turning-point in his scientific career. The Royal Society, appreciating the highly scientific value of his researches on the Determination of the Indices of Electric Refraction, offered him a subsidy from the Parliamentary grant they received.

Dr. Bose then turned his attention to the possibility of transmitting electric telephonic signals through space without the use of wires, at one and the same time with Professor Marconi. Bose gave a successful demonstration in 1895.

A discovery by Bose is that there is no sharp line between the nervous life of plants and animals.

BOSE, SUBHAS CHANDER (born 1897). A man of great ability, who has always directed it against the Government.

Mr. Bose was born in Calcutta of a Hindu family. After completing his education at Calcutta and Cambridge, he secured a place in the Indian Civil Service by competitive examination, but he resigned and joined the Non-co-operation movement. He became the Chief Executive Officer of the Calcutta Municipal Corporation and later was elected Mayor of Calcutta. He was President of the Bengal Congress Committee



SIR JAGADISH BOSE
Topical

for several years and was also elected to the Provincial Legislative Council. He took a prominent part in the boycott of the Royal Commission on Indian Constitution. He was interned during the last Congress Civil Disobedience movement in 1933, and released when his health failed, and he asked to go to Europe for medical treatment. Without heeding the Government's warning, he returned to India towards the end of 1936, and was placed under preventive detention, but later released because of ill-health.

Bose definitely stands to the left of the Congress. It is the system that he wants to change, not a mere form of administration. He advocates a synthesis between Communism and Fascism for India, and has coined a new word "Samyavada," meaning literally "the doctrine of synthesis or equality."

BRAHMA. See article, Vol. II.

BRAHMAPUTRA, RIVER. See article, Vol. II.

BRAHMINISM. See article, Vol. II.

BUDDHISM. See article, Vol. II.

BUFFALO. See article, Vol. II.

BURMA. See article, Vol. II.

CALCUTTA. See article, Vol. II.

CARNATIC. See article, Vol. II.

CASHMERE GOAT. See article, Vol. II.

CASTE. See article, Vol. II.

CATECHU. See article, Vol. II.

CAUVERY RIVER. Rising in the Western Ghats in the State of Coorg, it flows south-east through Mysore where the Cauvery Falls at Mettur provide the power for a great hydro-electric undertaking. It then turns due south through Madras Presidency, but after continuing along the border of the Trichinopoly district for some 18 miles it adopts a more easterly direction until, in Tanjore, it opens out into an immense fertile delta.

CEYLON. See article, Vol. II.

CHAND, LIEUT.

D. MISRI. An enthusiastic amateur pilot who has the distinction of being the first Indian to win the Viceroy's Challenge Trophy Air Race in 1936. His average speed over the whole



MISRI CHAND
Photo. Fox

course of 1520 miles (Madras-Bombay-Delhi) was 116.5 miles per hour.

CHANDRA, BABU HARIS (1850-1885). One of the greatest writers of Hindi literature. He was born in Benares, and com-

menced writing even before he had completed his college education. He produced no less than 175 works in his short span of life on various subjects, including history, biography, patriotism, religion, drama, and love. The contact of India with the West had the effect of stimulating in him many new ideas.

Haris Chandra's poems, which are numerous, are considered to be the best part of his work.

CHITRAL. See article, Vol. II.

CLIMATE. Meteorological phenomena in India is remarkably varied. The extremes



PERIYAR LAKE TRAVANCORE

The monsoon, which first breaks on the Western Ghats, often causes floods.

Photo: Indian State Railways

of climate known to the tropics or the temperate zone are all found within its boundaries: this infinite variety is the distinguishing characteristic of the country. The great snow-covered Himalayas, the plateaux and broad plains, glaciers, mountain torrents, wide deltas, and slow-winding rivers provide all shades of climate from the equatorial conditions of the south to the almost arctic conditions of the Himalayas. That great range and the plateau of Afghanistan on the north provide, however, for a continental type of weather over one area. There are the two marked divisions of the dry season or north-east monsoon and the rainy season or south-west monsoon, with a further division into four seasons: cool and cold in January and February; hot in March, April.

May, and part of June; south-west monsoon (wet), June to October; retreating monsoon, November and December. The cool and cold districts are mostly to be found only by going into the hills and mountains.

The cool season—the word “cool” being used merely to compare it with the hot season—can, north of the Deccan, be likened somewhat to the climatic conditions of the summer months in central and northern Europe; while those of the peninsula section are similar to those of Spain, Italy, and Greece. During that season the winds over India and Ceylon are chiefly from the north-east, and thus provide comparatively cool, dry weather most suitable for Europeans. An exception is the Punjab, where a rainfall of a few inches provides for the winter crops of wheat and barley. Elsewhere and at other periods the climatic conditions vary from those of an icefield to those of a hot-house. Except in the north-west, May is the hottest month. In the north-west the month of June has that distinction. Then an average day temperature of about 95° F. in the shade is experienced, the highest temperatures being found in the northern plains, where at midday the sun is nearly overhead.

The influence of the south-west monsoon is felt from about the middle of June to the middle of October. The monsoons present a strange phenomenon. For nearly one-half of the year the wind blows from one direction and then, after a short interval, usually from the opposite direction for the rest of the year. The peninsula area of India is practically cut off from the encircling ranges by the great Indo-Gangetic plain. It is divided into unequal parts by the Vindhya hill systems, which almost continually cross the country from west to south to east by north, immediately south of the Tropic of Cancer. To the north the rivers drain mostly into the Nerbada and the Ganges, while the waters to the south drain into the Tapti, the Mahanadi, and the Godavari. Conjointly with the valleys of the Nerbada and Tapti, which drain part of the western half, a mass of hills gives at different seasons an easterly and westerly direction to the winds, and during the south-west monsoon produces a heavy rainfall by condensation. South of the Vindhya is the Deccan plateau, which terminates to the west on the Sahyadri range (Western Ghats), and branches to the east (Eastern Ghats). The south-west monsoon sweeps this plateau, but only after it has



VALLEY NEAR OOTACAMUND

In the Nilgiri Hills the climate is pleasantly warm and there is a dependable rainfall.

Photo: Indian State Railways



WASTE LAND IN SIND

At present covered with lai brush and babul tree, irrigation from the Sukkur barrage will soon transfer it into fertile country.

Photo: Indian State Railways

surmounted the western barrier of the Ghats. Because of this the rainfall is usually light at Poona and other places which are under the lee of the range, while over the easterly parts of the plateau the rainfall is moderate. It lasts for several weeks longer, being brought by the easterly winds blowing from the Bay of Bengal. About the beginning of November the southerly wind ceases to blow up the Gangetic valley and goes towards the south-west coast. The rainfall is heavy in the strip of low country which borders the peninsula below the Ghats.

When the south-west monsoon comes there is a sharp fall of temperature, for which the rainfall itself is largely responsible. Hence the rains are more than welcome. Before the arrival of the rains the drought is so terrible that wild animals and crocodiles will approach the wells in the villages in their search for water. Lightning and thunder announce the monsoon's arrival.

CLIVE. See article, Vol. II.

COMMUNICATIONS AND TRANSPORT.

Primitive forms of transport play a large part in the movement of passengers and goods in India. Goods are conveyed in country carts drawn by bullocks, buffaloes or camels, or on the backs of camels, mules, and donkeys. Passengers travel in light springless conveyances: *ekkas*, *tongas*, *jukas*, to which ponies, and less frequently, bullocks, are harnessed.

Of the more advanced forms of transport, railways are the most important.

Railways. When railways were first projected in India, the country was under the government of the East India Company, though a titular Mogul Emperor still lived

at Delhi. The first proposal for the construction of a railway was made in 1844, and five years later contracts were entered into between the East India Company and railway companies for the construction of railways leading out of Calcutta, at a cost of £1,000,000, and out of Bombay, at a cost of £500,000. The year 1853 saw the first line opened for traffic.

Under the contracts the railway companies were guaranteed a return of 5 per cent on the capital employed, and the promotion of railway construction by guaranteed companies was the accepted policy of the Government for many years. The Government wanted railways for political and military reasons, but did not think it practicable or advisable themselves to provide the funds; the commercial possibilities of railways were considered to be unfavourable, as it was anticipated that religious sentiment would limit passenger travel.

The guarantees proved to be expensive, and, during the years 1869-1880, funds for new construction were provided by the Government. The desirability of a more rapid expansion of railways than this method provided, was emphasized by a Committee which inquired into a famine that ravaged parts of the country in 1878, and various forms of subsidy were again resorted to with a view to encouraging the investment of private capital in railway enterprise. The terms were, however, more favourable to the Government than the original guarantees, and less onerous terms were secured when the older companies' contracts expired, enabling the Government to become



COMMUNICATIONS AND TRANSPORT

1. Road menders in Madras. In Madras there is one mile of road for every 4½ square miles of country, and hence it is the best supplied of any State. 2. Bullock cart. This form of transport has by no means been ousted by more modern forms. 3. Electric train at Bombay. Electrification is being advanced rapidly. 4. Unloading English coal from lighters at Dermal, Kathiawar. 5. A river junk on the Indus. 6. Steam train in Mysore. There are 43,000 route miles of railway in India, 7000 miles of which is the property of various Indian States.

Photos: Indian State Railways

the predominant partner in the undertakings. But the principal of company management was maintained, till that policy was altered in deference to a resolution of the Legislative Assembly in favour of State management in 1923. Since that date, as contracts have expired, the Government has taken over the management of railways, and now owns and manages some 17,000 miles of line, and is the predominant partner in 14,000 miles managed by companies. The balance of the 43,000 route miles in operation consists of lines the property of Indian States (7000 miles) and minor railways.

Of the 43,000 miles of railways, 21,000 miles are broad gauge (5 ft. 6 in.), 17,500



CARRYING FISH TO MARKET

Photo: M. Milner

miles are metre gauge, the remainder is narrow gauge. The metre gauge was introduced with a view to economy; the ill-effects of break of gauge have been mitigated by providing through communication by each gauge as far as possible.

The Government supervision of railways is carried out by a Railway Board, individual railways being controlled by an officer designated as Agent. Until recent years, superintendence was in European hands; but out of 1900 superior officials, 620 are now Indians, to whom three out of every four new appointments are given. Of the other staff totalling 705,000, all but 14,000, chiefly Anglo-Indians, are Indians.

Religious sentiment has not, as at first anticipated, hindered the development of passenger travel: Indian railways convey some 460,000,000 passengers annually. The average distance travelled, 35 miles, is small for so large a country; 97 per cent of the passengers travel third class; the fares are low, the average earnings per passenger-mile amounting to 0.31d., compared with the English figure of 0.74d. Passenger traffic accounts for 30 per cent of the total earnings. Earnings on goods traffic average 0.62d. per ton as compared with 1.39d. in

England, and the average number of miles a ton of goods is conveyed amounts to 240. The principal commodities transported are coal, manganese ore, edible grains, oil seeds, jute, cotton, iron and steel, hardware, and mineral oils.

Railways in India have achieved a high state of efficiency. Electric suburban services are provided at Bombay and Madras, and, a measure in advance of other Empire railways, India has electrified its main line for some 272 miles beyond the Bombay suburban area, as far as Igatpuri and Poona.

Under the India Act, 1935, railways in India will be administered by a non-political body, the Federal Railway Authority; but the Federal Government will undertake the duty of securing the safety of the travelling public, will inquire into the cause of accidents, will prescribe rules relating to the construction of railways, and regulate the acquisition and disposal of land by the Federal Railway Authority. Restrictions are imposed on the Federal Legislature as regards altering the constitution of the Federal Authority and relative to legislative interference with rates and fares. Railway finance will continue to be separate from the general budget of the country; the Railway Federal Authority will be deemed to owe the Federation the money provided for railway capital, and will pay interest thereon. Any surplus will be divided between the Federal Railway Authority and the Federation.

Motor Transport. Railways in India have in recent years, as in the case of other countries, experienced strong competition from motor transport. So far, this competition has been limited almost entirely to passenger traffic over comparatively short distances, though, in some instances, motor services extend to 90 and 100 miles, as between Bombay and Poona, and Kolhapur and Poona. Railways are under the control of the Central Government, roads under the Provincial Governments, and there is possibility of wasteful competition. Taking the country as a whole, one mile of railway exists for every 30 square miles of country, and 1 mile of road fit for motor transport for every 21 square miles. As regards railways, the most favoured area is the United Provinces, where the relationship is 1 mile of railway to 19 square miles; as regards roads, the most favoured area is Madras, where the relationship is 1 mile of road to 4½ square miles, and it is nearly as low in Bombay.

Inland Water Transport. Another strong competitor with railways, but only in Bengal and Burma, is inland water transport. In Bengal, efficient steamer services ply on the

rivers Ganges and Brahmaputra between Calcutta and Patna and Calcutta and Dibrugarh. The steamers carry passengers and goods, the latter also being conveyed in trailer flats. A very large amount of conveyance is undertaken by country craft. In Burma a very fine steamer service operates between Rangoon and Bhamo on the Irrawadi River.

The Inland Steamer Vessels Act, 1917, provides for the inspection of steamers and licensing of masters and engineers by the Government. An Act of 1930 gives the



RIVER TRANSPORT

The peculiar covered boats are used for transporting both goods and passengers. They are often, in addition, used as houseboats.

Photo: Indian State Railways

Government power to fix maximum and minimum rates for passengers and goods.

Coastal Shipping. A similar measure is proposed for coastal shipping, viz. to grant the Government power to control rates to prevent existing undertakings cutting rates to kill new indigenous enterprises. The coastal traffic is extensive, imports amounting to Rs. 114 crores and exports to Rs. 109 crores in the year 1935-36. In that year the tonnage of coastal vessels with cargoes entered and cleared at British Indian ports was: British ships, 14,512,409 tons; British Indian ships, 3,079,874 tons; foreign (German, Japanese, Norwegian) ships, 3,302,645 tons; native craft, 1,314,965 tons.

Airways. There are, comparative to the size of the country, few large towns in India, and only a small public able and willing to pay the charges for air travel. Development of purely Indian air services is therefore likely to be slow. But Indian National Airways operates a mail service twice weekly between Karachi and Lahore, and Messrs. Tatas a similar service: Karachi-Bombay-Madras. Also, Indian Transcontinental Airways are associated with Imperial Airways

in the airways service between Karachi and Singapore, which touches at Jodhpur, Delhi, Cawnpore, Allahabad, Calcutta, Akyab, and Rangoon.

COOMARSWAMY, DR. ANANDA, K. (born 1877). Born in Ceylon he received his higher education at London University, taking his D.Sc. Dr. Coomarswamy is one of the founders of the India (Art) Society in London. He has written a number of books on Indian arts and crafts and also on religion. His publications include *The Dance of Siva*, *History of Indian Art*, *Rajput Painting*, *A New Approach to the Vedas*, *Buddha*, and *The Gospel of Buddhism*, etc.

DANCING, INDIAN. See DANCING, Vol. II

DAS, DESHBANDHU CHITTA RANJAN (1870-1925). Lawyer and political leader. Born in Calcutta, he took a degree at Calcutta University and then he came to England and was called to the Bar at the Middle Temple in 1892.

He was enrolled as an advocate at the Calcutta High Court on his return to India. The partition of Bengal by Lord Curzon in 1905 created profound unrest in the Province, which provoked repressive measures and led to numerous prosecutions. It was by a spirited and successful defence of Arabinda Ghose, the apostle of the extreme nationalists, that Das won his reputation as a lawyer of remarkable ability and persuasive eloquence. When he was at the top of his profession, he gave up his practice in obedience to the mandate of the National Congress for Non-co-operation with Government, took to the wearing of *khaddar* (handspun and handwoven cloth), and lived a life of the utmost simplicity.

Das seriously entered politics in 1917, when the *Satyagrah* (passive resistance) agitation of Mahatma Gandhi drew him into the deeper currents of the country's public life.

He was elected President of the Indian National Congress in 1922. He declared himself in favour of obstructive tactics within the Legislative Councils instead of boycotting them. His policy steadily gained ground and influenced the general elections held in 1923, when the Pro-Council Congressmen (or Swarajists as they were then called) were returned as the largest single party to the new Council in Bengal. Chitta Ranjan was a poet of considerable ability.

DAVADHAR, GOPAL KRISHNA (1871-1935). Hindu social worker. He was born in the Bombay Presidency of poor parents and educated at Poona. He was one of the foundation-members of the Servants of India Society, and latterly, for some years, he was its President. He also founded the Bombay Social Service League.

Davadhar's work was constant and productive. He was one of the founders of the Poona Seva Sadan Society, the main object of which is to make women self-reliant and to train them for educational, medical, and social welfare activities for other women, especially the backward classes.

He organized relief measures in the country at times of calamity, such as great floods, earthquakes, and the Moplah rebellion, and under his direction good work was done in the affected areas. He played a great part in the spread of the movement for co-operative rural credit to save the cultivators from the clutches of the money-lenders.

DAYANAND SARASWATI (1824-1883). Founder of the Arya Samaj and a great social reformer, he was born in Gujarat. As a Brahmin he devoted himself to the study of Sanskrit and was fully versed in the Vedic lore. From his study he was convinced that there is one God only, and He alone to be worshipped, and the four Vedas are God's knowledge and contain all religious truth; polytheism, the use of images and the taboos of caste were un-Vedic, and he felt he was called upon to restore the pure Vedic religion of the Aryans.

Dayanand was the first among Hindu reformers of modern times who boldly advocated the cause of *Sudhi* (purification), and publicly reclaimed Hindu converts to Islam. He founded Samajes (societies), now known collectively as the Arya Samaj. Their chief work is the maintenance of preachers, who disseminate the tenets of the Arya Samaj. Mool Shankar was the name of Dayanand Saraswati before he renounced the world.

DELHI. See article, Vol. II.

DULEEPSINGHJEE, PRINCE K. S. (born 1905). Ranked among the world's foremost

cricketers when he was at his best. He was born in Jamnagar. He was coached painstakingly in cricket by his uncle Ranjitsinghjee, "Ranji," who made a great name for himself thirty years ago. "Dulceep" played for Cambridge University and Sussex, and represented England in Test Matches against Australia, scoring a



K. S. DULEEPSINGHJEE
Photo: Fox

century in his first appearance in a Test Match in Australia. He retired owing to ill-health in 1934.

DUPLEIX, JOSEPH FRANCIS (1697-1764). See article, Vol. III.

DURBAR. See article, Vol. III.

DUTT, MICHAEL MADHU SUDAN (1824-1873). The greatest figure in Bengali literature in the nineteenth century. He was born in Calcutta. He completed his education in England and was called to the Bar, but did not practise. His two plays *Eketi, Bale Sabhyata* (So This is Civilization!), and *Buro Saliker Ghare Rom* (New Feathers on an Old Bird's Neck), may be regarded as the first genuine comedies in the Bengali language.

He was firmly convinced that Bengali literature would not make much headway until blank verse was introduced, and he himself was a student of Milton and wrote many poems in blank verse, among which "Meghnadbadh" holds the front rank.

After "Meghnadbadh," his masterpiece, he turned to the composition of lyrical poems. Here, also, he was a pioneer. He composed poems on purely moral topics for the entertainment of children after the style of *Aesop's Fables*.

DUTT, ROMESH CHUNDER (1848-1909). Born in Calcutta of a distinguished Hindu family. Dutt was educated in Calcutta and London, and entered the Indian Civil Service. He early turned his attention to literature, his first serious works being his well-known historical novels in Bengali. One of them, *The Slave Girl of Agra*, appeared later in English. He produced, also, a social novel, which was afterwards rendered into English under the title of *The Lake of Palms*. In 1885, with the help of some Sanskrit *pundits* (scholars), he began a Bengali translation of the ancient hymns of the Rig-Veda, and later he wrote a *History of Ancient India*, based on Sanskrit literature and the researches of European scholars, entitled *Civilization in Ancient India*.

In 1893, Dutt founded the "Banigya Sahitya Parishad" or the Academy of Bengali Literature. Meanwhile he was appointed Commissioner of Burdwan Division, the only Indian to have such a high rank in the nineteenth century.

For seven years after his retirement from public service, Dutt was a lecturer on Indian History at University College, London. He also translated the two ancient epics of India, the *Mahabharata* and the *Ramayana* in a readable form, condensing them into English verse. His *Open Letters to Lord Curzon* on land assessments in India have become historic, but his *Economic History of India* was his crowning work.

The last few years of his life he was Dewan of Baroda State. He built up a complete system of self-government from the bottom

to the top, and introduced free and compulsory primary education throughout the State.

DUTT, TORU (1856-1877).—An Indian girl, who in her brief life wrote many works both in English and French. She was born in Calcutta of a cultured Bengali family.

Her girlhood was spent partly in France and partly in England, where she was educated. In India she shared with her father in his deep studies in European and Indian literature. She was, perhaps, a better French than an English scholar.

Perhaps her best work in English is *A Sheaf Gleaned in French Fields*, a volume of translations from various French poets.

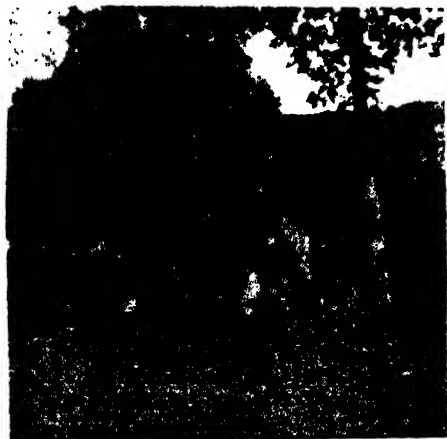
DYARCHY. See article, Vol. III.

EAST INDIA COMPANY. See article, Vol. III.

EAST INDIES. See article, Vol. III.

EDUCATION. Indians have a love of learning inborn in them. From the very earliest times a man of learning, and even a literate man, has always been looked upon with respect and admiration. Even when the country was torn by internecine wars or harassed by invasions from outside the lamp of learning was never entirely extinguished, but burnt with a fitful flare. Before the advent of the British, however, there was no systematized state education. Such education as there was depended almost entirely upon private or charitable enterprise. As in other countries, education was combined with religion, and the opening up of a school was considered an act of merit. Enlightened kings like the Mogul Emperor Akbar the Great encouraged learning and fine arts, and gathered round the Court a galaxy of talent similar to that which existed in England during the reign of Elizabeth. Generally speaking, the bulk of education was confined to the study of sacred and religious books like the Vedas, the Koran, and the Hadis. Instruction was imparted by means of a network of indigenous schools. These were the "Tols," in which Brahmin pupils were instructed in sacred books by Brahmin teachers and "Pathshalas," where instruction was given to the lower castes. The above two kinds of schools catered for Hindus. For the Mohammedans there were "Madrasahs" and "Makhtabs." Taking into account the vast population of India, the number of those who attended these indigenous schools was very small. In the beginning of the nineteenth century, before the British power had consolidated itself in India and after a long period of foreign invasions and revolutions, Indian learning was at a very low ebb indeed. Western education had not yet been introduced, and there were hardly any printed books either

in the classical languages or in the vernaculars. About this time the East India Company directed its attention towards Indian education, not so much with a view to encourage Indian education in the first instance, but to provide for itself a class of educated Indians from which to recruit officers for various clerical and judicial posts. In 1781 Warren Hastings founded the Calcutta Madrasah, and in 1792 a Sanskrit College was established at Benares. In these Colleges, however, only the Indian classical languages, namely, Arabic, Persian and Sanskrit, were taught. It may be of interest



TAGORE'S COLLEGE, SANTINIKETAN
Students studying in the open air
Photo: M. Milward

to note that Persian was then the Court language and even European judicial officers of the East India Company had to write their judgments in Persian. It was at this time that some of the finest European scholars of Oriental languages flourished in India. Gradually, Indian public opinion veered towards a modern system of education in which the medium of education was to be English. This change in the outlook was greatly influenced by a rationalist movement of which the greatest protagonist was the great Indian reformer, Rajah Ram Mohan Roy (see separate article), who founded the Brahmo Samaj (a form of rationalized Hinduism). Rajah Ram Mohan Roy, although a profound scholar of Arabic, Persian and Sanskrit, was a strong champion of English education, so much so that in a letter to Lord Amherst, the then Governor-General, he bitterly attacked the proposal to establish a Sanskrit College in Calcutta as a retrograde step. For several years there was a bitter controversy as to whether the education of Indians should be through the

medium of a classical language or English. In 1835, Lord Macaulay, who was then the law member of the Supreme Council of the Governor-General, championed the cause of English education, and wrote his famous minute which settled the question, at least for some time to come, as to whether the medium of instruction should be the classical Indian languages or English, in favour of the latter. In this minute, which is a masterpiece of its kind, he criticized Oriental learning with characteristic vigour but gross exaggeration, asserting dogmatically the view that "a single shelf of a good European

14. Delhi
15. Nagpur
16. Andhra
17. Agra
18. Annamalai

Most of these Universities are financed to a greater or less degree by the Government and are State controlled.

Difficulties. Modern education in India which began with secondary and higher education was soon brought face to face with the problem of mass education. The population of India (353,000,000) is predominantly rural. According to an authoritative estimate nine-tenths of the population of India depend in one form or another upon agriculture. The task of educating India's teeming millions is, therefore, stupendous. Coupled with the difficulty of providing for this enormous number is not only the poverty, often extreme, of the masses but also age-long inertia, dozens of languages and restrictive caste distinctions. Schools have to provide not only for the different languages in different parts of the country but for special castes also, as in certain parts of India a boy belonging to a high caste will not sit on the same bench with a boy belonging to a low caste. The British Government, realizing the extreme importance and urgency of the problem of primary or mass education, has from time to time appointed Commissions to tackle this question. Even if funds are available for providing not only thousands but hundreds of thousands of schools, the economic condition of the Indian peasant is not such that he can afford to send his children to school for any length of time. The Indian farmer requires his children as soon as they are of any use to help him in his field operations, thereby interfering with the continuity of their education. Over and above this, in some sparsely populated areas, villages are so scattered that a boy has to walk many miles to attend school. These are some of the principal difficulties in the way of mass education. There are other obstacles which will be discussed later.

Educational Grades. The system of education as it obtains in British India may be classified into three parts, primary, secondary, and higher.

Primary. Under this head come the elementary schools where children between the ages of about 5 to 10 are given the rudiments of education. The medium of instruction is the vernacular, in other words the mother-tongue of the pupils. The number of these schools which are dotted all over British India and chiefly in the villages, runs into hundreds of thousands. To be more exact, according to the Report



PHYSICAL TRAINING

School instructors undergoing a refresher course in Calcutta.

Photo: Keystone

library was worth the whole native literature of India and Arabia." Macaulay was supported by the authorities and although schools for Oriental learning were maintained, English education was definitely adopted and encouraged by the Government.

In 1857 three Universities on modern lines were established at the presidency towns of Calcutta, Madras, and Bombay, and some years later Universities were established at Lahore and Allahabad also. At present there are as many as 18 universities, namely—

1. Calcutta
2. Bombay
3. Madras
4. Punjab
5. Allahabad
6. Benares, Hindu
7. Mysore
8. Patna
9. Osmania
10. Aligarh, Moslem
11. Rangoon (Burma)
12. Lucknow
13. Dacca



UNIVERSITY AND SCHOOL BUILDINGS

1. University Lecture Hall, Lahore. 2. Muir Central College, Allahabad. 3. Science College, Trivandrum. 4. Victoria Technical Institute, Madras.

Photos: Indian State Railways

of the Education Department of the Government of India published in 1933-34 the total number of such schools in British India was 200,934. These schools maintain one to three classes and generally have one or two teachers. In many parts of India they are co-educational. The standard of teaching, however, is not high, due to the fact that many of the teachers are not properly trained and until recently the kind of education imparted was often divorced from the real needs of the children of the soil. The authorities are now realizing that education, in order that it may be of real use to the rural population, must be of a kind which should benefit them in the normal sphere of their work. Mere capacity to read and write, therefore, is not enough. Judging from European standards, the salary of these elementary or primary school teachers is often incredibly low, and in some provinces it is merely a pittance of about £1 a month. So long as the teachers are low paid, one cannot legitimately expect a high degree of efficiency from them. Another obstacle in the way of literacy is that even where the schools impart the right kind of education, the environment in which the pupil lives after finishing his primary education allows no scope for keeping up the knowledge acquired

at school. The family of the village boy or girl is often so desperately poor that it cannot provide books, and at present village libraries are rare. Newspapers do not penetrate into the villages, and the Indian adolescent spends the greater part of his day with his parents working in the fields. The result is that the little education acquired in school is soon forgotten and in a few years the young Indian peasant reverts to illiteracy. Wastage of this kind has assumed enormous proportions, and the Provincial Governments are now realizing that the proper method of attacking this problem is not merely to multiply the number of schools but to concentrate on fewer and better schools, and, in addition, to provide facilities whereby the village boy and girl may have opportunities of reading interesting books and papers, and thereby keeping contact with the outside world. The problem to a large extent is economic also, as, unless and until the economic standard of the Indian peasant is substantially raised, all his time as well as that of his children will be spent in extracting from the soil a meagre existence. Recently village welfare movements, the Boy Scout movement, and other movements of indigenous but allied character have tried

with much success to make school work interesting and pleasant for the Indian boy, and to teach him the higher aspects of citizenship. Construction of new roads and improved methods of communication, like the motor bus, are daily bringing the villages nearer and nearer to the towns, thereby enlarging the intellectual horizon of the villagers.

Secondary. Under this head come the middle vernacular schools, the middle English schools and the high schools. In the middle vernacular school the medium of instruction is vernacular. In addition to his mother-tongue the student is taught history, geography, arithmetic, geometry and elementary science. The course of instruction in the middle English school is similar to that of the middle vernacular school but, in addition to vernacular, English is also taught. As a knowledge of English is now essential if a student wants to succeed in practically any walk of life in India, the middle English schools are more popular than the middle vernacular schools. The age of the pupils ranges from 10 to 14 years, and such of them as can afford it, and have the requisite mental ability, pass on to the high schools. The number of middle schools, though not small, is, regard being had to India's enormous population, not at all adequate. In these schools the student attains a degree of literacy that precludes any lapse into illiteracy on return to his village.

The high English schools teach up to the Matriculation of the School Final standards. The medium of instruction in the higher classes is English. The number of these schools in British India is 3356. These schools prepare the way for college and university education and most of them are situated in towns. Quite a large number of them depend upon private enterprise, although in practically every town of any importance, there is a high English school entirely financed by the Government. The number of boys attending high English schools in 1933-34 in British India was 899,491 and girls 108,053. The Indian boy has to learn a difficult foreign language, and a good deal of his time is taken up in the study of that language. The standard of the Indian Matriculation consequently does not compare favourably with that of London Matriculation, for example. In some places, the experiment of teaching all subjects in the vernacular in the high schools has been tried but has not, for the present, proved popular, as English is favoured in so far as higher education is concerned, so much so that there is a current Indian proverb "Learn Persian and sell oil"

that is to say, by studying Persian one becomes fit for being a grocer only.

Higher Education. As already stated, there are 18 universities in India in which the course of instruction goes up to graduation and higher standards. Although several principal vernaculars are taught as a second language, the medium of instruction is almost entirely English. With the exception of a few universities like Aligarh, Benares and Dacca, which are residential, most of the universities are of the affiliating type. A good many universities, however, arrange for a course of post-graduate lectures on different subjects. Colleges in India are located almost entirely in fairly large sized towns. Some of them are privately managed, but the majority are financed by the Government and all are under Government inspection and supervision. The ordinary graduation course extends to four years after matriculation, and a student has the option of taking a science or a purely arts course. Although there is an honours branch in both the arts and science courses, there is not much specialization and the energies of students are frittered away by the study of a multiplicity of subjects. There is almost a pernicious craze amongst Indians to qualify for a university degree and large numbers of Indian students, ill-equipped for academic studies of a higher kind, rush to colleges for admission, with the result that practically every college is overcrowded. Judging by the number of students on its rolls, the Calcutta University is probably the largest university in the world. The cause of this headlong rush to colleges is that it is the ambition of practically every young middle-class Indian to qualify for Government service, and until he has obtained the B.A. degree he is not in the running for any of the higher Governmental posts. Apart from this, the possession of a degree gives him a certain social status. Even those who fail to obtain a degree set a market value on their unsuccessful attempts, and it is not uncommon to find applicants for posts stating as one of their qualifications that they are "failed B.A.'s." This setting of an artificial and altogether disproportionate value on degrees has done great harm to the cause of real education and culture in India, and is responsible for a good deal of chronic unemployment amongst the middle-classes. It is obvious that since the number of Government posts is limited, a large number of degree holders are every year faced with bitter disappointment. The extent of unemployment amongst these unfortunates may be gauged from the fact that recently for the post of a petty clerk carrying a salary of £7

a month there were as many as three thousand applicants. The mills of the universities produce numbers of not only the unemployed but also the unemployables, as the academic training which they receive in these institutions in many cases renders them unfit for other vocations. Steps are now being taken to guide education along the right path and to reserve higher academic education only for those who are really fitted for it. For the majority it is clear that as soon as they acquire a certain modicum of education in the high or middle schools they should be taught some craft or

culture, and agricultural schools are to be found in most of the Provinces of India

Mention has been made in an earlier part of this article that English is the common medium of instruction in the upper classes of high English schools and universities. Although a knowledge of English has brought India into touch with the world, it has to a certain extent discouraged the study of oriental languages. Further, it has also in some ways acted as a de-nationalizing factor. There is, therefore, a demand for a national system of education where education would be based on national ideas and requirements



VIEW OF THE ROCK AND TANK AT TRINCHINOPOLY, MADRAS

Photo Indian State Railways

trade. It is for this reason that vocational training has been included in the curriculum of most of the high and middle English schools. Unfortunately Indians themselves have not realized that they have taken the wrong turning. There is a certain amount of inherited aversion to manual work also, and the young educated Indian with his subtle brain and philosophic temperament often finds it difficult to use his hands. There are a few technical schools where instruction in arts and crafts is given, but their number could with great advantage be increased. In addition to arts and science colleges, there are colleges for Forestry, Agriculture, Veterinary Science, Medical Studies, etc. There are also institutions for higher research like the Bose Research Institute in Calcutta, the Institute of Science, Bangalore, and the Imperial Council of Agricultural Research, Delhi. Latterly much attention is being paid to the development of agri-

and, at the same time, would keep abreast of world events and progress by a knowledge of English also. The Indian State of Hyderabad has embarked upon a very interesting and successful experiment by establishing the Osmania University, where the medium of instruction from the beginning right up to the end is through the medium of Urdu, but English is taught as a compulsory second language. A staff of translators has been employed to translate all the latest Western books on all the arts and sciences into Urdu. This experiment might with advantage be tried in other parts of India, but there are some difficulties in the way, as there are several provinces where more than one language is spoken. Besides, English being the language of the ruling race as well as of business, one who has a better knowledge of English has undoubtedly an advantage in Government and business circles.

Recently some of the upper class Indians helped by the Government of India have established an Indian Public School at Dehra Dun. Masters from some of the famous Public schools in England have been appointed on the staff of this school, which is run on the model of the best English Public schools. It is reported to be a great success, and it is probable that in the near future the number of such schools will increase. Another interesting venture is the poet Tagore's National School called Viswa Bharati at Bolepur in Bengal, which is entirely a private concern. At this school education is on national lines, but at the same time it keeps abreast of modern tendencies. The school has attracted to itself voluntary workers on a nominal pay even from places outside India. Its ideal is not only to educate but also to instil into the minds of the pupils the national culture of India. Mention may also be made of the Indian Military Academy at Dehra Dun which is the Sandhurst of India, and where young Indians from various parts of the country are trained for commissioned rank.

Female Education. The greatest obstacles in the way of female education are two pernicious customs, namely child marriage and *purdah*. Until the passing of the Sarda Act a few years ago, which made marriages of girls under 14 illegal and penal, child marriage, especially amongst the lower classes, was extremely common. In a large part of India girls are confined to their houses as soon as they reach the age of puberty and are not allowed to mix with the outside world. This is known as the *purdah* system. Although Indian women occupy a high place in family life and are treated with respect, their education has been sadly neglected in the past, as it necessarily must be when girls are married young and are shut up within the four walls of a house as soon as they grow up. Indians are now realizing that, if India is to occupy her proper place in the world, Indian women must be educated, as otherwise it will be solving only half the problem and, in addition, introducing many causes of unhappiness in domestic life. Female education, therefore, has been slowly but steadily progressing, although here also there is much room for improvement. Traditions and customs die hard, but once the *purdah* system is abolished by public opinion, the educational progress of Indian women will not be slow. The percentage of female literacy in British India is 2 as against 13 of men. There are special primary, middle, high English schools, colleges, medical colleges, etc., for women, but their number is very small. Women are, however, coming

to the fore and in the new Constitution they have even got the vote. Conferences, like the All-India Women's Conference, in which women coming from all parts of India and representing different races and creeds take part, serve the very useful purpose of focusing public opinion upon the needs of Indian women.

Boy Scout and Similar Movements. The Boy Scout and Girl Guide movements have achieved great popularity in India. Almost every high school and many middle schools have organized troops of boy scouts and girl guides which play an important part in the corporate life of the school. Periodical outings and picnics are arranged where scoutcraft is practised. The number of boy scouts which was only about 15,000 fifteen years ago is now said to be 350,000. India has sent contingents of boy scouts to World Jamborees held from time to time, and in 1937 a great Jamboree was held in India at which the Chief Scout, Lord Baden-Powell was present. In addressing a large assembly of boy scouts from all over India, Lord Baden-Powell paid a very high tribute to Indian scouts. There are other similar movements in India, for example, the Bratachari Movement which originated in Bengal and whose chief purpose is to popularize and revive Indian folk dances as a means of keeping physically fit. There are also Seva Samity (Welfare and Service Association). Scouts, a body organized more or less on the model of Boy Scouts. These movements have very far reaching effects on Indian education, as in the early days the Indian boy was tied to his desk all day long, and the school curriculum was of deadly monotony unrelieved by any kind of healthy and useful relaxation or amusement.

What has been said in the preceding paragraphs applies to British India which comprises two-thirds of India. In the remaining part of India which is ruled by Indian princes the system of education is more or less similar to that followed in British India. Practically all the colleges in Indian States are affiliated to universities in British India.

Indian Students Abroad. In the preceding paragraphs the system of education in vogue in India has been described. It may be of interest to mention here that large numbers of Indian students, especially of the well-to-do classes, go abroad every year for finishing their education. Most of them come to England but a few go to the Continent and America also. The number of students studying abroad in 1935 was 1529. About 44 per cent were studying in London, 8 per cent at Cambridge, and

4 per cent at Oxford. These students come for the study of a wide variety of subjects and there is hardly any branch of arts or sciences in which they have not distinguished themselves. Two Indians achieved the high distinction of Senior Wrangler at Cambridge, and the number of Indians obtaining first classes and doctorates in university examinations in England may be counted by the dozen every year. In

their own country for further studies. In consequence there is a waste of time and money. The high value set by the Government of India and by Indians themselves on foreign degrees, acts as a fatal lure. There is no doubt, however, that in time when Indian universities develop and reach a sufficiently high standard there will not be so much need for Indians to go abroad, and only those few who want to take up a higher



VILLAGE IN BENGAL

Villages are often at considerable distances from the nearest school and this, together with the problems of languages and of caste, are principal difficulties in the way of mass education

Photo Indian State Railways

the field of sports, too, they have had an equally good record. One may mention the late Maharajah of Nawanagar (Ranji), K. S. Duleepsinghjee (Tulip) and the Nawab of Pataudi (Pat) as world famous figures. Indians have also obtained "blues" in tennis, cricket, hockey and boxing. Recently an Indian was elected as President of the Oxford Union, and another of the Cambridge Union.

Large numbers of Indians come annually to England for legal studies. The legal profession, which is greatly overcrowded, is very popular in India. This large influx of Indian students into Europe has its drawbacks also, as a number of them go abroad without having first properly equipped themselves in

course of study or research work will leave India.

The foregoing survey of Indian education has necessarily been general, as in the small space available it would be impossible to give a detailed description of the educative system of a sub-continent like India. It would be no exaggeration to say that the intellectual life of modern India is largely a by-product of English education. One may go even further and say that the awakening of Indian nationalism owes much to English education. Generation after generation of Indians brought up in the atmosphere of English Liberalism and reading English history, English newspapers and the books of such champions of liberty as

John Stuart Mill, could not help modelling their own political aspirations after England. The English language has become more or less the *lingua franca* of India at least amongst the middle and the upper classes and the possession of a common language has helped in binding together Indians of different races and speaking a diversity of languages. Latterly, there has been a renaissance in Indian languages and literature, and political leaders like Mahatma Gandhi have lent the weight of their authority to the recognition of Hindustani as the national language of India. Whatever may be the result of nationalistic movements, there is no doubt that India will speak to the world through the medium of English. Although the British Government has not yet succeeded in making the masses of India 100 per cent literate, English education has achieved in little more than a century very substantial results. In the domain of Science one may cite scientists of international reputation like Sir C. V. Raman, F.R.S., and Sir Jagadish Bose, F.R.S.; in Literature, Rabindranath Tagore winner of the Nobel prize and Mrs. Naidu; in Oratory, the Rt. Hon. Srinivasa Sastri, reputed to be one of the finest speakers in the English language in the world, and Mr. M. A. Jinnah; in Mathematics, Ramanujan; in Engineering, Sir M. Visveswaraya, and in Philosophy, Sir Radha Krishnan. One could go on multiplying instances, but these names are just a few of the many which would be a credit to any country. Education which has played such a very important part in the formation of the national idea in India in the past is destined to play a far more important part in the future. India is on the eve of a great constitutional experiment of modern times, and the success or failure of the experiment will depend largely upon whether she does or does not possess an educated and intelligent electorate. How long the political partnership between India and England will last, no one can foretell, but this much is certain: that the intellectual link forged between England and India is of a permanent character which no political controversy is likely to sever.

ELEPHANT, INDIAN. See ELEPHANTS, Vol. III.

EVEREST, MOUNT. See article, Vol. III.

FAKIR. See article, Vol. III.

FLAG, INDIAN. See FLAGS, Vol. III.

GAEKWAR, MAHARAJA SAYAJIRAO (born 1862). An exemplary Indian ruler. His immediate predecessor had no male issue and he was an adopted son. He was only 13 years of age at the time of his accession to the *gadi* (throne).

Baroda has made amazing progress during

his sixty-one years' rule. It was in many respects a medieval State when he came to the throne. To-day it stands among the best governed States in the country.

Baroda was the first State to introduce free and compulsory education, and to popularize the library movement. The State is covered with a network of local self-governing institutions. Roads, railways, and ports have been developed, and indigenous industries fostered. The port of Okha has berthing accommodation for ocean-going steamers, and there are textile, sugar, match, cement, and salt factories in the State.

Inequalities arising from caste distinctions are banned in the State.

The Gaekwar presided at the World Congress of Religions held in London in 1936.

GANDHI, MAHATMA. See article, Vol. III.

GANGA SINGHJEE, HIS HIGHNESS THE MAHARAJA OF BIKANER (born 1880). He stands in the forefront of Indian ruling Princes. He succeeded his brother on the throne in 1887 when young, but assumed full powers in 1898. He is the twenty-first Rajput ruler of Bikaner.

Ganga Singhjee was educated at the Mayo Princes' College in Ajmer. Great improvements have been made in the State in different directions since he assumed full ruling powers. Education is free in all its stages, the judicial system has been reorganized, separating judiciary from the executive, and expediting justice. Some of the important features of his progressive administration are the establishment of the Legislative Assembly, municipal boards and village *panchayats* (councils) as well as co-operative credit societies.

The Maharaja holds an unsurpassed record of high public service to India as well as to the Empire. He first saw active service in China, in the China War of 1900-01, and in the World War he served on three continents (Europe, Asia, and Africa) in its early stages.

Maharaja Ganga Singhjee represented the princes of India in the Imperial War Cabinet in 1918, and at the Peace Conference, when he was one of the signatories to the Treaty of Versailles. He led the Indian



MAHARAJAH GAEKWAR OF
BARODA
Photo: Fos

delegation to the League of Nations in 1924 and again in 1930, and represented India at the Imperial Conference in London.

He was elected the first Chairman of the Chamber of Princes on its inauguration in 1921, and was elected to this office on three consecutive occasions.

GANGES, RIVER. See article, Vol. III.

GAUR. See article, Vol. IV.

GAVAL. See article, Vol. IV.

GAYAL. See article, Vol. IV.

GEOLOGY. The alluvial plains of Hindustan stretching across northern India from the Ganges River delta to the mouths of the Indus River, separate two strangely contrasted geological regions; peninsular India on the south from the great arc of the Himalaya on the north, with its festoons of mountains to the north-west and north-east.

The Peninsula is one of the oldest portions of the earth's crust, and since its foundations were originally metamorphosed in the dawn of geological time, it has stood permanently and internally unmoved. It is a tableland worn down from an almost unmeasurable antiquity and, in the everlasting conflict between land and sea, the waters have never advanced beyond its fringes, with one temporary and restricted exception, throughout the whole period of geological history embraced within the record of the fossiliferous rocks.

To the north-west in Sind, Baluchistan, and the Frontier Province; to the north along the whole length of the Himalaya; to the north-east in Assam, Burma, and the Federated Shan States, very different conditions prevail, for disturbed, displaced, and contorted strata are the rule, everywhere. Moreover, there have been repeated marine invasions, and over much of these regions the seas have usually spread far and wide, while earth forces culminated, in comparatively recent geological times, in raising the highest mountain range of our planet from the bed of the ocean.

The ancient rocks of the Peninsula occupy about three-fifths of its area with their manifold varieties of Archaean schists and gneisses. The Dharwar system of quartzites and schists is an example of the former, economically important by reason of its vast deposits of iron ores, particularly in Orissa; its copper ores in Singhbhum and its gold-bearing quartz veins in the Kolar Field of Mysore. Other types of the schists, like those of the Central Provinces, contain crystalline limestones and valuable occurrences of manganese ores. Besides gneisses of numerous kinds, intrusive granites are common, while in southern India the Charnockite Series builds the larger hill masses.

On the upturned edges of these Archaean rocks and separated from them by a profound unconformity, lie the Purana formations of which the Cuddapahs and Vindhya are typical examples. They are mainly unfossiliferous shales, sandstones, and limestones, little altered or disturbed, and presumably for the most part of Precambrian age.

Of later date still are patches of Gondwana sandstones and shales of freshwater origin, let down into the Archaean floor and so



IN THE HIMALAYAS

One of the latest of the world's mountain systems the Himalaya Range is also the loftiest.

Photo Indian State Railways

preserved through the agency of faulting. They are the remnants of a more extensive cover of deposits in river valleys and lakes, ranging in age from the Upper Carboniferous to the Cretaceous, and formed when the Peninsula was part of Gondwanaland. This was a great southern continent which stretched from South America through South Africa to India and, at least for a time, into Australasia and Antarctica. Boulder beds of glacial origin occur low down in these rocks in some of the countries mentioned, and prove that, as in India, the land was buried under a deep ice cap at the commencement of the era. Many changes of climate followed, but of special significance was the damp, temperate atmosphere of the Damuda period, which fostered the growth

of the coal swamps and gave rise to the seams supplying most of India's output to-day.

In the middle of the Jurassic period the sea had encroached into areas now forming parts of Cutch and the Rajputana desert and, in the Upper Cretaceous into the lower part of the Narbada valley, into Assam and the eastern coast. About that time Gondwanaland began to break up and igneous activity was manifested on a colossal scale, the partial results of which, the lava flows of the Deccan Plateau, still cover an area of 200,000 sq. miles, sculptured by denudation into flat-topped, terraced

top. From these beds the remains of many extinct and ancestral mammals have been obtained.

2. A Central Zone, comprising both the lesser Himalayas and the line of high peaks behind them, composed of granite, gneiss, and crystalline schists, together with a great group of unfossiliferous strata.

3. A Northern Zone, lying behind the high peaks and extending into Tibet. Here is displayed one of the finest records of the earth's fossiliferous rocks. Not a single geological period is unrepresented, for the gaps in one locality are filled up in another amongst the high mountains of Kashmir,



SOUTHERN POINT OF CAPE CORMORIN

Photo Indian State Railways

hills. In the Western Ghats of Bombay, these lavas and ash beds, with their associated interstratified layers, rise to a height of 4000 ft. above sea-level, practically in their original positions.

Space does not permit of any account of the Salt range of the Punjab with its fossiliferous Cambrian rocks and its renowned *Productus* limestones, exhibiting a conformable passage from the Palaeozoic to the Mesozoic periods; of the rock succession to be seen in Baluchistan and the North-West Frontier Province; or of the Palaeozoic formations of the Federated Shan States, forming a link between India on the one hand and Indo-China on the other. It must suffice to give here a broad, generalized section across the Himalayan region to the north of the Indo-Gangetic plain, where the rocks arrange themselves naturally into the three following zones—

1. An Outer Zone of sediments, mainly of Tertiary age with the river-borne sandstones and conglomerates of the Siwaliks at the

Spiti, and Kumaun. Of the Dravidian era, corresponding to the European Palaeozoic from the Cambrian to the Carboniferous every member is present, the oldest extending into the Salt range of the Punjab, and others into the Hindu Kush and Afghanistan. The Aryan era, containing all the rocks younger than the Permo-carboniferous, is represented by fossiliferous, marine deposits laid down in a great central sea—the Tethys—which extended from Europe, along the northern shores of Gondwanaland into south-eastern Asia throughout the Mesozoic period. In the central Himalayas, conformable strata begin in the Permian, continue through the Triassic and Jurassic, and end in the Cretaceous, attaining a thickness of 7000 ft.

Eastern Tibet, China, and parts of Upper Burma had become dry land before late Cretaceous times, but on the site of the Himalaya Nummulitic limestones of the early Tertiary period were laid down. Then the Himalayas began to emerge and the ocean was driven back until in the Miocene,

it was restricted to Baluchistan and Burma. In the shallowing Pegu Gulf of the latter country, swarming with fish and molluscan life, the oilfields of to-day originated. The Pliocene witnessed the final, violent phases of the mountain growth, but the frequent earthquakes, unhappily marked by periodical catastrophes, are forcible reminders that the Himalayas have by no means attained repose.

GHATS, EASTERN. A mountain range which, beginning on the northern side of the Cauvery River in the Carnatic, runs northward in a line with the sweep of the coast of the Bay of Bengal until it reaches Orissa, when it falls away into the plain which precedes the Ganges delta. The Eastern Ghats does not run in an unbroken line but it is cut into sections by the valleys of the Kistna, Godavari, and Mahanadi rivers.

GHATS, WESTERN. Really an unbroken mountain chain which stretches from Cape Cormorin to the Tapti River which divides it from the Satpura Range. At one point, where the part of the range known as the Nilgiri Hills is linked with the Cardamom Hills, the ground for between 20 and 30 miles does not rise above 1500 ft., though it never falls below 600 ft. The range runs parallel with the Malabar coast, and in places the coastal plain has only an insignificant depth since the lower mountain slopes come within a few miles of the sea.

GHOSE, SRI AUROBINDA (born 1871). "The Sage of Pondicherry," as he is popularly known, was born in Bengal of well-to-do Hindu parents. His education was mainly in England, and he studied at Cambridge. On his return to India he entered the Educational Service of the Gaekwar of Baroda, but he gave this up to be the Principal of the National College in Calcutta, just then started. And thus he also gave up, later, to edit the new Nationalist daily *Bande Mataram*. Ghose soon adopted an extremist position, and he frequently praised revolution as a way to the promised land.

Aurobinda fled to Pondicherry to escape arrest in 1911, and has stayed in French territory in India ever since. He had already spent a year in Alipur jail, in Calcutta, awaiting trial—he was eventually acquitted—on a charge of complicity in the Muzaffarpur bomb outrage in 1908.

Sri Aurobinda has in the years between published in English a number of important works on religion and the philosophy of *yoga*.

GHOSE, DR. SIR RASH BEHARI (1845-1921). Scholar, jurist, and legislator. He was born in Burdwan (Bengal) of a Hindu family, and educated at Calcutta University. He was for a year Tagore Professor of Law, and his lectures were found useful in the codification of the Law of Mortgage in India.

He was enrolled as an advocate of the Calcutta High Court in 1867, and did not take long to rise to the top of his profession. He was elected President of the Faculty of Law of Calcutta University in 1893, a post he held until 1895. He was also a member of the Imperial Legislative Council for a number of years and rendered the Government invaluable service in connection with the Civil Procedure Code Bill of 1908.

Dr. Ghose was a man of nationalistic views, and presided over the twenty-third Indian National Congress at Madras.

GIDNEY, LT.-COL. SIR HENRY ALBERT JOHN (born 1873). The accredited leader of the Anglo-Indian community in India. Born in Bangalore, he was educated at Bombay, Oxford, Cambridge, and London. He was a Post-graduate Lecturer in Ophthalmology for a year at Oxford before he entered the Indian Medical Service in 1898. He served as Ophthalmic Surgeon in the China Expedition (1900-1901), the North-West Frontier Expedition (1914-15), and the World War.



COLONEL GIDNEY

Photo - Fox

Col. Gidney is President-in-Chief of the Anglo-Indian and Domicile European Association of all-India and Burma. He attended sessions of all the Round Table Conferences on Indian constitution in London as an Anglo-Indian delegate.

GOA. See article, Vol. IV.

GODAVARI RIVER. A river which rises in Bombay Presidency on the eastern side of the Western Ghats. It flows in a mainly east direction until it reaches Sironcha on the boundaries of Hyderabad and the Central Provinces, when it assumes a southerly course and acts as the eastern boundary of Hyderabad for some 200 miles until it enters the Presidency of Madras. After flowing for another 50 miles it forms a wide delta and enters the Bay of Bengal through seven main channels. The Godavari receives a number of tributaries. At the head of the Delta a dam to enable the whole of this vast area to be irrigated has been erected.

GOKHALE, GOPAL KRISHNA (1866-1917). Born at Katluk, a village near Poona, the son of a Maratha Brahmin. After his university course, he served as a Professor at Ferguson College in Poona. When only 31



GODAVARI RIVER AT DOWLAISHWERAM
The bridge is over three and a half miles long.
Photo: Indian State Railways

he came to England to give evidence before the Welby Commission. His evidence made his reputation as one of the foremost Indian economists and statesmen. In 1899 he was elected to the Bombay Legislative Council and became a member of the Imperial Council in 1903, where he was an unrelenting critic of the Administration. He was one of the most important personalities of the National Congress and was elected its president in 1905. One of his main political principles was his insistence on the necessity to India of the British connection.

Gokhale will always be remembered for the Servants of India Society which he founded.

GOLCONDA. See article Vol. IV.

GOVERNOR-GENERAL. See article Vol. IV.

GUJARAT. See article Vol. IV.

GWALIOR. See article Vol. IV.

HALIFAX, VISCOUNT. See article Vol. IV.

HARDINGE, LORD. See article Vol. IV.

HASTINGS, WARREN. See article Vol. IV.

HAVELOCK, SIR HENRY. See article Vol. IV.

HIGH COMMISSIONER. See article Vol. IV.

HIMALAYA. See article Vol. IV.

HINDU. See article Vol. IV.

HINDUSTAN. See article Vol. IV.

HIPPOPOTAMUS. See article Vol. IV.

HUGLI, RIVER. See article Vol. IV.

HUME, ALLAN OCTAVIAN (1829-1912). The son of Joseph Hume the Scottish reformer and Member of Parliament, he was born in Scotland, and educated at Haileybury. In 1849 he entered the Bengal Civil Service. When his distinguished official career was completed, he devoted his great gifts to guiding India along the path of political advancement and nationhood. He founded the Indian National Congress in 1883, to make the continuance of British rule conformable to the best interests of the Indian people

by bringing the existing government, administered in those days by British officials on autocratic lines, in touch with the people.

HUSAIN, MIAN SIR FAZL-I- (1877-1936). One of the builders of present-day India and undoubtedly the most successful practical politician of his day in the country.

Sir Fazl-i-Husain was born in Peshawar. He received his earlier education in Lahore and completed it in England, where he took a Master's degree at Cambridge and was called to the Bar. On his return to India, he practised in the Punjab High Court, and took an active interest in politics as a prominent leader of the Indian National Congress, though he parted company with that body when it embarked on a programme of Non-co-operation with Government in 1922.

On the introduction of the Montague-Chelmsford reforms in India, Sir Fazl-i-Husain was appointed one of the first Ministers in the Punjab Government. The Punjab Ministers can claim to have produced results unparalleled in any other part of the country, and it was Sir Fazl who prepared the way for this success. His term as Minister for Education, Health, and Lands, saw the initiation of innumerable schemes for agricultural improvement.

HYDARI, THE RT. HON. SIR AKBAR (born 1869). He was born of a cultured Moslem family in Bombay. After completing his education he joined the Indian Finance Department. In 1905 his services were lent to the Nizam's Government as Account-General in Hyderabad State. Later he became Finance and Railway Member and subsequently Prime Minister.

The remarkable headway that Hyderabad has been making of late years is definitely the result of the sound financial policy introduced and steadily maintained by Sir Akbar.

He has also played an important part in the advancement of Moslem education in India, and was President of the All-India

Moslem Educational Conference. The Osmania University in Hyderabad owes its existence mainly to him.

Sir Akbar Hydari was a delegate from the premier Indian State to the Round Table Conferences and the Parliamentary Joint Select Committee on Indian constitutional reform in London, where he gave unhesitating support to the Federal scheme.

HYDERABAD. See INDIA, Vol. IV.

HYDERABAD, STATE OF. See article Vol. IV.

IMAM, SIR ALI (1869-1932). Eminent in the legal profession, he also played a dominant part in the political development of India. He was born in the village of Neora, near Patna, of a noble Moslem family. After education locally, he came to England and was called to the Bar in 1890. He was elected President of the first annual session of the All-India Moslem League held at Amritsar in 1918, and in the following year was a member of the League deputation to London in connection with the Montague-Chelmsford reforms.

Sir Ali Imam was the first Moslem to be appointed Law Member of the Viceroy's Executive Council. In 1919 he became President of the Executive Council of Hyderabad.

INDIA. General article. See INDIA Vol. IV.

INDIAN MUTINY. See article Vol. IV.

INORE. See article Vol. IV.

INDUS, RIVER. See article Vol. IV.

INDUSTRIES AND MANUFACTURES. It is not possible in this short survey to trace the history of Indian industry and manufacture prior to 1857, when administrative control in India was transferred to the Crown, or to examine in detail the manifold developments which subsequently occurred as the result of the establishment of law and order. Such developments include the extension of cultivation and the diversification of crops; the development of transport and communications enabling India to take advantage of world markets, especially after the opening of the Suez Canal; the inflow of British capital and enterprise and the establishment of new industries, such as tea cultivation and the manufacture of jute. Others are the large demand created through greater agriculture wealth for British goods, especially textiles and engineering materials; and, from the beginning of the present century to the World War, the gradual growth of indigenous industries, especially of cotton manufacture and steel production, which have since attained such large dimensions, reducing the corresponding imports to relatively small proportions. The War led to important changes affecting production and trade alike. The contraction in imports, accentuated by the diversion of

British industry to the production of munitions, afforded new opportunities to Indian industries and enterprise, and a movement fully justified by the availability of local capital, enterprise, and raw materials was given a further stimulus by the growth of *swadeshi* sentiment, representing the economic counterpart of political nationalism. In 1923, industrial development was stabilized and assured of full public and official support, by the adoption, on the recommendation of the Indian Fiscal Commission, of the policy of "discriminating protection."



BUILDING A COTTON MILL AT CAWNPORE

Photo: Fox

In accordance with this, protective tariffs have been imposed in aid of almost every industry able to establish a claim to reasonable efficiency in meeting domestic needs. The effect of this policy has been to accelerate the production in India of many manufactures formerly imported in exchange for exports of Indian primary products. Thus, India possesses the raw materials and the market, and has had no difficulty in acquiring the machinery necessary for the development of a great cotton manufacturing industry. As the joint result of these advantages, and of the imposition of protective tariffs, Lancashire exports of cotton piece-goods to India have been reduced to about one-fifth of their pre-War average. Stating the position simply and concisely, it may indeed be said that whereas, prior to 1914, of every 4 yds. of mill-made cotton

piece-goods consumed in India, Lancashire supplied 3 yds. and the Indian mills only 1 yd.; to-day, on the same basis of calculation, the Indian mills supply 3 yds.; Lancashire $\frac{1}{2}$ yd.; and Japan the other half. India is also manufacturing a growing percentage of her requirements in terms of steel, and, in the last five years, has started a sufficient number of sugar factories to render herself independent of imported sugar, previously derived mainly from Java. A number of smaller industries have also emerged, all tending to reduce imports.

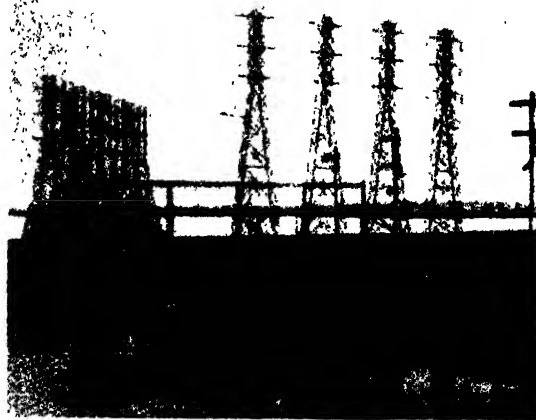
It must not be assumed that such developments necessarily imply that India will lose its former status and value as one of the largest outlets, until 1936 the largest single outlet, for British manufacturers. But a change in the composition of the import trade is undoubtedly in progress, and the problem confronting oversea producers is to adapt themselves to India's changing requirements, taking full advantage of the new demands that are arising—such as for motor vehicles, electrical goods of all descriptions, wireless instruments, machinery, aircraft. All these are outside the range of India's own production, but they will be in growing demand if and when India recovers the purchasing power of which she has been deprived by the fluctuations in trade and prices dating from 1929. In the intervening years India has lost none of her capacity or desire or need to export, but world conditions have reduced her shipments of produce to relatively small proportions, and there has been a corresponding and inevitable contraction in her ability to buy imported manufactures, essential though these remain to human comfort and material development.

As a debtor country, it must be remembered, India requires a favourable balance of payments of something like £40,000,000 each year to meet her sterling obligations; yet so steep has been the decline in the volume and value of Indian exports that

the balance of trade in merchandise, which stood at approximately 79 crores in 1929-30 (1 crore equals £750,000), fell to under 3½ crores in 1932-33; and, at the end of 1936, still remained far below the normal level. See *BANKING AND FINANCE*, Vol. IX, page 5051.

It is important to realize that the general desire in India for a full development of her industrial resources is inspired, not only by a natural ambition in the future Federal Dominion to reduce its dependence on foreign industries, but by hard, economic necessity.

One of the major problems at present confronting the Government of India is the formulation and application of measures calculated to ensure an expansion in food production proportionate to the rapid and continuing increase in population. Addressing the Council of Agricultural Research towards the end of 1936, Lord Linlithgow, whose interest in this phase of



HYDRO-ELECTRIC POWER
Pylons carrying the 110,000 volt transmission lines of the Tata Power Co.'s Andhra Valley scheme.

Photo Indian Trade Commissioner

Indian economy dates from his chairmanship of the Royal Commission on Indian agriculture, and whose rural development programme has already earned him the popular title of "The Peasants' Viceroy," quoted a calculation of the Public Health Commissioner which showed that the population of India is increasing by 4,000,000 a year, and at this rate will reach 400,000,000 in 1941, and that only about three-quarters of an acre per head of population in British India is under cultivation for food production. These facts, as His Excellency views them, are "staggering," and indicate a problem of profound significance, especially to future Governments, and show that means must be found of bringing large tracts of country, still unproductive, under fruitful cultivation, which can be done in no other way than by extending facilities for irrigation. Although approximately £100,000,000 has already been expended on irrigation projects in India, which can boast of the largest irrigation works in the world, and although this investment has proved extraordinarily



RURAL INDUSTRIES

1. Indian women in Palitana State reeling cotton yarn. In the background a man is preparing a loom. 2. Working a lathe. Though this type of lathe is primitive, marble workers of Calcutta obtain magnificent results with its aid. 3. A goldsmith at Delhi. 4. A potter of Mysore working at the roadside. 5. Shoemakers of Delhi. They produce shoes which would have pleased the Emperor Akbar, so little have their styles changed. 6. Carpenters making boxes of sandalwood at Malabar. 7. Weaving on a primitive loom at Agra. 8. A bullock provides the power at an oil mill at Ajmer.

Photos: Indian State Railways; Keystone

profitable alike to the State and to the cultivators affected, there is admittedly scope for further advance in this direction.

The policy to which Lord Linlithgow is dedicating his viceroyalty was foreshadowed in the report of the Agricultural Commission, whose activities and recommendations he guided, which expressed the conviction that "no substantial improvement in agriculture can be effected unless the cultivator has the will to achieve a better standard of living, and the capacity, in terms of mental equipment and of physical health, to take advantage of the opportunities which science, wise laws, and good administration may place at his disposal." That the Indian subsistence problem is pre-eminently a problem of agricultural improvement is attested by the calculation that whereas in 1881 the urban population represented only 9.4 per cent of the total population, in 1931 the percentage had increased to only

11 per cent despite the intervening expansion in trade, transport, and industry, and the new opportunities for non-agricultural employment thus afforded. One of the outstanding features of the Indian economic situation is, indeed, the pronounced failure of new industrial enterprises, despite the adoption of protective tariffs and other forms of State aid, to absorb any appreciable percentage of the additional population, still less to relieve the congestion previously existent in the rural areas, as emphasized by the Indian Fiscal Commission (1921-22). The unhappy consequences of the increased dependence upon the primitive agricultural system thus occasioned, have unfortunately been accentuated by the steep decline in commodity prices and the sharp contraction in India's overseas trade associated with the world depression which began in 1930.

The Indian Fiscal Commission, on whose recommendation the policy of discriminating protection was adopted, included among the potential benefits of a protectionist programme the "provision of more profitable employment for labour, reducing the excessive dependence of the country on the

unstable profits of agriculture," but, despite the free imposition of protective tariffs, the proportion of the population engaged in industrial employment remains insignificant, while the pressure on agriculture remains unrelieved. The number of workers engaged in organized industries is under two millions, yet it is not suggested in any quarter that the retention and development of such industries is other than essential to India's welfare and progress, partly on account of the indirect employment they afford, partly on account of their importance as an outlet for Indian primary products, and partly

as an outlet for Indian capital and enterprise.

It is important to remember, for example, that the cotton industry is the largest single consumer of Indian cotton, the Calcutta jute mill industry is the largest single consumer of jute, and that, without the many new sugar factories which have been established in the last five years, the

widespread adoption of the improved types of sugar-cane evolved by the official Agricultural Department would have been nullified.

The fact remains that, relative to her total population, the employment afforded in India by the development of modern industries is insignificant. Thus, although the shipments of Lancashire cotton goods to India have been reduced to one-fifth of their pre-War yardage, mainly owing to increased production in India, the number of workers employed in the Indian mills during the same period has increased by under 200,000, and it may be assumed that, in the event of the complete cessation of the imports of cotton piece-goods into India, the Indian mills would require at most only another 100,000 workers. It has been estimated that if all the manufactured goods now imported into India were produced in Indian factories—ignoring all other reactions—probably not more than a million new factory workers would be required. Although such a calculation may appear of only academic interest, it has a practical significance as a reminder that, in fact, the largest remaining obstacle to further industrial



RAILWAY CARRIAGE BUILDING SHOPS
Photo: Indian State Railways



KOLI TRIBESMEN PACKING FISH

Practically all Indian fishing is done within the five fathom contour, though there are 40,000 square miles of continental shelf within the 100 fathom line.

Photo: M. Milward

progress in India is no longer external competition, but the small *per capita* consumption of modern industrial products, owing to the low level of purchasing power, especially among the vast rural population who represent approximately three-quarters of the total population. If the purchasing power of the rural population is so low, the explanation is to be found, not only in the survival of primitive methods of cultivation, but in the usurious methods of finance which have deprived so large a percentage of the cultivators of all incentive to cultivate more intensively and secure larger yields.

It is, however, necessary to insist that the present unhappy plight of India's rural population is not due to indigenous methods of finance alone. India has suffered severely as the result of the steep and sudden decline in the world value of primary products, so much so that on the basis of the prices ruling in the three years ending 1928-29, the percentage decline in the prices of goods exported from India was 47 per cent in the year 1934-35, although the subsequent period has brought a slight improvement. The effect of the depression on India was a decline in her balance of trade in merchandise from 79 crores in 1929-30 to under 3½ crores in 1932-33. As already emphasized, only the unprecedented shipments of de-hoarded gold have enabled India in recent years to balance her budget and meet her heavy sterling charges (see BANKING AND

FINANCE). It is upon the cultivating classes that the price decline has fallen with the greatest severity, for, while their incomes have fallen, their indebtedness, actual and nominal, has increased.

The outlook for the Indian peasantry and their products is obscured, not only by the fall in prices, but by the contraction in world markets occasioned by the events of the post-slump period, and above all, by the spread of economic nationalism, a movement from which India itself has not held entirely aloof. The availability of world markets for India's surplus supplies of primary products can no longer be regarded with complete confidence. To-day the three main factors limiting the overseas demand for Indian products are the cessation in the growth of Western populations, the increasing tendency and ability of European countries to produce their own primary products or to manufacture scientific substitutes, and, last, not least, the contraction in Indian imports of manufactured goods, thereby reducing the ability of Western countries to maintain the former exchange of factory products for foodstuffs and raw materials.

STATISTICAL SUMMARY

MONETARY UNITS

3 pice	= 1 pice
4 pice	= 1 anna
16 annas	= 1 rupee
1 lakh	= Rs. 100,000 (£7,500)
1 crore	= 100 lakhs (£750,000)
Rate of exchange = 1s. 6d.	

EXTERNAL TRADE
Imports, 1935-36

	Rs.
Merchandise	1,34,39,11,304
Government Stores	2,40,08,535
Treasure	7,44,82,426
	<u>1,44,24,02,265</u>

Principal imports: cotton manufactures, 16 per cent; machinery, 10 per cent; iron and steel, 5 per cent; oils, 4 per cent.

Sources of imports (percentages)—

	1909-14 (average)	1935-36
United Kingdom	63	39
Rest of Empire	7	10
U.S.A.	3	7
Japan	2	16
Java	6	1
Many	6	9
Other foreign	13	18

Exports (Indian merchandise) 1935-36:
RS. 1,60,48,75,472.

Destination (in percentages)—

	1909-14 (average)	1935-36
United Kingdom	25	31
Rest of Empire	16	15
U.S.A.	8	10
Japan	8	14
France	7	4
Germany	10	6
Other foreign	26	20

RAILWAY MILEAGE

Route mileage opened for traffic 31st March, 1935,
43,020.

CALCUTTA PRICE INDEX NUMBER SERIES
(End July, 1914=100)

1929 (pre-slump, September)—

Exports, 133; Imports, 150

1936, March—

Exports, 82; Imports, 105

COTTON PIECEGOODS

Consumption of Cotton Piecegoods (including fents)
and Handloom Products

Year	Net Imports (Crore yards)	Per Caput yards	Indian Mills	
			(Crore yards)	Per Caput
1913-14	313	9.78	108	3.38
1929-30	190	5.43	229	6.54
1935-36	97	2.62	350	9.46

	Handloom Goods		Net Consumption (grand total)	
	(Crore yards)	Per Caput	(Crore yards)	Per Caput
1913-14	107	3.34	528	16.50
1929-30	140	4.00	559	15.97
1935-36	166	4.49	613	16.57

INDIAN STEEL INDUSTRY

Production of pig iron, 1935-36 . . . 1,541,000 tons
" steel ingots . . . 880,000 "
" finished steel . . . 677,000 "

MINERAL OILS

Kerosene (India and Burma) 162.4 million gal.
Petrol 91.7 "

SUGAR

1926-27 . . . 1935-36
121,026 tons . . . 926,800 tons
Number of factories, 140.

CEMENT

Production in 1935-36, 891,000 tons.

JUTE MANUFACTURES

(Production in Millions)

Year	Hessian		Sacking	
	Cloth yd.	Bags No.	Cloth yd.	Bags No.
1935-36	1268	108	55	547

EXPORTS (1935-36)

459 million bags.
1218 million yards of cloth.

TEA

Production in 1935-36 . . . 396½ million lb.
Exports by sea . . . 312½ "
Acreage under tea . . . 826,200 acres.

COFFEE

Production (1934-35) 32.7 million lb.
Exports (1935-36) 216,000 cwt.

METALS AND ORES

(Exports in 1935-36)

Manganese 729,000 tons
Wolfram 7800 "
Chromite 26,000 "
Tin 4200 "
Pig lead 1,309,000 cwt.
Pig Iron 538,000 tons
Spelter 1,000,000 cwt.

LAC

Exports in 1935-36, 487,600 cwt.

COAL

Production in 1935 . . . 23,000,000 tons
Shipments in 1935-36 . . . 198,000 "
Supplied to steamers engaged in
foreign trade . . . 547,400 "

IQBAL, SIR MOHAMMED (born 1876). Moslem poet and a philosopher. On the foundation of his conception of Mohammedanism he has built a new social system.

Iqbal was born at Sialkot. He was poetically gifted, and when he was a student at Lahore, he composed a number of poems in Persian on English models. He came to England for further studies, and the result of his researches in Persian philosophy was a treatise on the *Development of Persian Thought*.

On his return to India, Iqbal wrote in Persian that he might appeal to the entire Moslem world. The whole of his teaching was expressed in the two volumes of Persian verse *Asrur-i-Khud* (The Secret of the Self), and *Ramuz-i-Bekhudi* (The Mysteries of Selflessness). His two other volumes *Pyam-i-Mashrik* (The Message of the East), and *Zabur-i-Ajm* (The Psalm of Persia), provide an elucidation of the teachings embodied in the first two volumes.

Of late years, Iqbal has been writing in Urdu for the Indian Moslem public alone.

Sir Mohammed, a member of the All-Indian Moslem League, has lately become more prominent in politics.

ISMAIL, AMIN-UL-MULK SIR MIRZA MOHAMMED (born 1883). Born in Bangalore in a ancient aristocratic Persian family. Sir Mirza received his education in a Mission School and later at the Bangalore Central College.

He entered the public service of his State as a subordinate officer in 1905 and became the head of the administration as Dewan in 1926, the position which he still holds in Mysore.

Sir Mirza played a prominent part in all the three Round Table Conferences and the deliberations of the Parliamentary Joint Select Committee on Indian reforms.

IYER, SIR SUBRAMANYA (1842-1924). Born of a Brahmin family in Madura in south India, Iyer was educated in Madras and became a lawyer. He took a keen interest in English and American law and Roman Jurisprudence. In 1895 he was appointed Judge of the High Court of Judicature at Madras.

Sir Subramanya was also a great educationist and was for a number of years a Member of the Senate of Madras University. He was the first Indian to become Vice-Chancellor of the University.

Following his retirement he had been a life of strenuous work for India's regeneration. He was President of the Dharma Bakshana Sabha ever since he had founded it, and used it as a means of reforming the management of Hindu religious institutions. He was a member of the Theosophical Society and was a staunch supporter of it.

JAINISTS. See article, Vol. V.

JINNAH, MOHAMMED ALI (born 1876). A Moslem, born of Khoja parents in Karachi. After his school education he was sent to England where he was called to the Bar, later practising in the Bombay High Court. In 1910 he was elected by the Mohammedans of the Bombay Presidency as their representative in the Imperial Legislative Council, where he gave willing support to every liberal measure involving larger national issues, like the special Marriage Bill.

Mr Jinnah was an ardent apostle of Indian self-Government and President of the Bombay Home Rule League, but he did not support the Civil Disobedience movement.

Mr. Jinnah has a large following. He has been twice President of the All-India Moslem League, and has formed the All-Indian Parliamentary Board of the Moslem League for election purposes. He is opposed to the Federal scheme.

JODHPUR. See article, Vol. V.

JOSHI, NARAYAN MALHAR (born 1879). Indian labour leader. He was born of humble Hindu parents at Goregaun in Bombay Presidency, and was educated at the Deccan College in Poona. He joined the Servants of India Society in 1909, and his activities included welfare work in Bombay mills.

He has attended, as delegate, the International Labour Conference at Geneva a number of times, and has also been nominated by the Government to the Indian Legislative Assembly from time to time since 1920, to represent labour interests.

Mr. Joshi was instrumental in having the League of Nations Labour Offices in Asiatic countries. He played an important part in the formation of the Asiatic Labour Congress, which held its first session at Colombo in 1934. He is also one of the founders of the Trade Union Congress in India.

He was a Member of the Royal Commission on Labour in 1929-30. He represented Indian labour in all the three Round Table Conferences, and was also a delegate to the Parliamentary Joint Select Committee on the Indian constitution in London.

JUGGERNAUT. See article, Vol. V.

JUMNA, RIVER. See article, Vol. V.

JUNG, SIR SALAR (1829-1883). Eminent Indian statesman. Sir Salar Jung, from 1853 to 1883 as Prime Minister to the Nizam of Hyderabad, transformed a troubled and almost bankrupt State into one which, at the present time, is the richest in India.

Salar Jung was born in Hyderabad of an old noble Moslem family. He started his career as a revenue officer and rose to the position of Prime Minister in 1853 at the age of 24. The Government was nearly bankrupt, existing on credit from moneylenders,

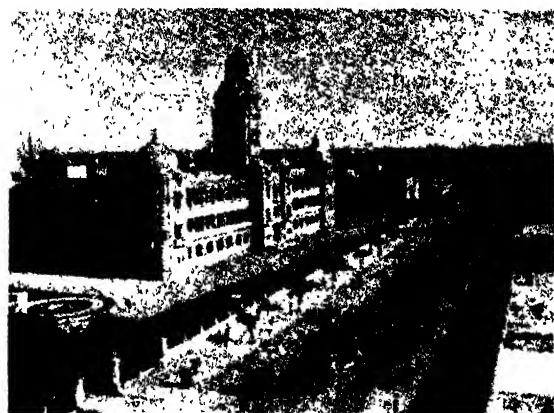
who were assigned districts as a security for repayment. The Nizam's own jewels were mortgaged. Salar Jung brought order from chaos by overhauling the entire administrative machinery.

In 1869, the Nizam Afsul-ud-Daula died, leaving an infant son to succeed him, and the Government of India appointed Salar Jung to act as Regent conjointly with Nawab Shamsu-l-Umara. He visited England in 1876 in the hope of obtaining the restitution of Berar to the Nizam. His real name was Turab Ali Khan.

JUTE. See article, Vol. V.

KARACHI. A seaport of India, the capital city of Sind in the Bombay Presidency. It is situated on the Arabian Sea west of the delta

of the Indus. The nearest Indian port to Europe it has shown a rapid increase in trade in recent years. It is connected with Amritsar and Delhi by rail and is also connected by rail with the Indus River above its delta. Karachi is the largest depot for air transport in India since it is used by the Australian air liners as well as by those serving India. It is also the main R.A.F. station in India. Karachi carries on a large export trade with Europe in cotton, hides and skins, etc.



MUNICIPAL BUILDINGS, KARACHI

Photo: Indian State Railways

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KASHMIR. See article, Vol. V.

KHAN, NAWAB SIR MOHAMMED AHMAD SAID, OF CHATARI (born 1888). Born of a noble Moslem family, he was educated at the Aligarh College and entered public life in his early twenties, and has all along taken a leading part in social, political, and educational activities in the U. P. He was elected to the Provincial Legislative Council under the Montague-Chelmsford Reforms in 1920. Three years later he was appointed a Minister and worked in that capacity till

1926, when he became Home Member. Twice he acted as Governor of the Province, once in 1932 and again in 1933. He attended two of the sessions of the Round Table Conference on Indian constitution in London.

Since his retirement from official life, Sir Mohammed Ahmad has been the President of the All-India Moslem Conference.

KHAN, MOHAMMED IFTIKBAR ALI, THE NAWAB OF PATAUDI (born 1910). He was born in the Punjab and learnt his cricket while a student in the Chiefs' College in Lahore. When he came to England he played for Oxford University and Worcester, and the Gentlemen of England. He represented England against Australia, and he scored a century in his first Test Match. He was one of Wisden's first five cricketers of the world in 1932.

KHAN, SIRDAR SIR SIKUNDER HYAT (born 1892). One of the most experienced politicians of the Punjab of which he was acting-Governor in 1932 and again in 1934. More recently he held the post of deputy-Governor of the Reserve Bank of India, but he resigned from it, to return to the Punjab politics to lead the Unionist Party.

Sir Sikunder, who comes of a noble Moslem family, was educated at Aligarh, and later at University College, London. He was appointed to the Brigade Headquarters Staff during the World War, and was the first Indian to command a company, holding a commission on active service. He had formerly seen service in the third Afghan War.

KHAN, SIR SYED AHMED (1817-1889). The greatest leader of the Indian Mohammedans of recent years. Syed Ahmed was born in Delhi. He was educated at home by his mother, who was a highly cultured lady. He took up service under the East India Company but he devoted his leisure hours to study and research, and became one of the most well-read men of his time in Persian, Arabic, Moslem, theology and contemporary history.

The Indian Mutiny of 1856-57 brought home to him the need of a better understanding between the rulers and the ruled. Through his writings he tried to dispel the wrong notions of Englishmen on the causes of the Mutiny.

In 1869, Syed Ahmed visited England to see if the British system of education could be introduced in India in a modified form. He was struck with the residential educational system at Oxford and Cambridge and was inspired to launch, in 1872, the scheme of a Moslem University at Aligarh.

Syed Ahmed was appointed a member of the Imperial Legislative Council by Lord Lytton, the then Viceroy, in 1878, and was reappointed to it in 1881 by Lord Ripon. He was made a member of the Education Commission in 1882. In 1887 he was appointed by Lord Dufferin a member of the Public Services Commission.

KHYBER PASS. See Vol. V.

KINCHINJUNGA. See article, Vol. V.

KISTNA RIVER. A river with an immense outflow into the Bay of Bengal, it is valueless for navigation because of its turbulent current. It rises in the Western Ghats near the Arabian Sea coast but on the other side of the mountains. Its outfall is south-east of its source but the river is erratic in its course, sometimes flowing east, sometimes south. Fifty miles north of Reachar in Hyderabad it is joined by the Bhima River, and on the boundary of Hyderabad and Madras it meets the Tungabhadra near Alampur.

KRISHNA. See VISHNU, Vol. VIII.

KRISHNAMURTI, IDDU (born 1897). Familiarly known as Krishnaji in the Theosophical and Star circles. He was born at



KRISHNAMURTI
Photo Photopress

Madanapalli, in Madras Presidency. His father was an ardent Theosophist. Leadbeater, the theosophist occultist, saw in him a promise of greatness. Krishnamurti was taken under the care of Mrs. Annie Besant, who soon after announced that Lord Maitreya, the World-teacher in the Occult Hier-

archy, would take the body of Krishnaji to give His teachings to the world when time came. An organization under the name of the "Order of the Star in the East" was formed to enable those who believed in the coming of the Lord to prepare themselves and the world for the great Advent. Krishnamurti was made the Head of the Order.

Since 1926, he has been holding yearly Star Camps at Ommen in Holland, Ojai in America, and in a few centres in India, at which he delivers his teachings to crowded audiences.

LAC. See article, Vol. V.

LACCADIVE ISLANDS. See article, Vol. IV.

LAL, SIR SHADI (born 1874). The first Indian to have been appointed permanent Chief Justice of a High Court of Judicature. He was born of humble Hindu parents at

Rewari, in the Punjab. He studied at Lahore, Oxford, and London, where he was Arden Scholar of Gray's Inn. In 1913 he was appointed Judge of the Punjab High Court and a few years later was promoted to its chief justiceship, and he continued to occupy this position for fourteen years till 1934, when he was appointed a member of the Judicial Committee of the Privy Council in London.

LANGUAGES. At the census of 1931 no fewer than 223 distinct indigenous languages were recorded, belonging to four different families of speech. Of this great number, however, 156, or more than three-quarters, belong to the Tibeto-Chinese family of languages. This family is believed to have had its origin in north-western China, and claims more speakers than any other linguistic family in the world.

The speakers of such languages in India are confined to Burma, Assam, and the adjacent Himalayan area, and they number in all only 15,000,000, or less than 5 per cent of the population of India. Excluding Burmese, the predominant language of Burma, the average number of speakers of each language is only 15,000. The reason for this extraordinary confusion of tongues lies in the fact that, prior to the advent of British rule, the country inhabited by the tribes in question was inaccessible hill and forest, and each tribe lived in constant hostility with its neighbours. Their dialects, being unwritten, were in a state of flux, so that, if a tribe split up, the different groups would in time become mutually unintelligible.

Just as the Tibeto-Chinese family of languages is spoken by more of the human race than any other, so is the Austric family the most widespread. Its speakers are found from Madagascar on the one side to Easter Island, off the coast of South America on the other; and they form the native population of Indonesia, Melanesia, Polynesia, and New Zealand. At the present time nineteen languages of this family (almost all of the Austro-Asiatic sub-family) are spoken in India by over 5,000,000 persons. About 750,000 are in Burma and Assam; their languages (such as Môn and Khāsi) belong mainly to the Môn-khmer branch of the above sub-family. The remainder are speakers of languages of the Mundā branch (Santālī, Mundārī, Ho, etc.) in Chota Nagpur and adjacent areas. From the fact that there is a Mundā substratum in some extant languages of other families, philologists conclude that Mundā forms of speech were once current throughout northern India, though their submergence must have taken place at a very remote period. On the other hand, it is known that in a

considerable part of Burma the Môn language was displaced by Burmese less than two centuries ago.

We now come to the Dravidian languages which have not so far been affiliated to any other linguistic family. At one time there was a tendency to regard them as autochthonous, but it is now recognized that there

of them are now found north of a line running from Goa via Berar to Puri on the Bay of Bengal. There are, however, philological grounds for believing that they were current throughout northern India before the advent, perhaps about 2000 B.C., of the invaders who brought the Aryan, or Indo-European, languages to India. These invaders were of the same language group as the people who diffused allied forms of speech throughout the greater part of Europe. They were a virile people and exercised a cultural influence out of all proportion to their numerical strength. They gradually secured a predominant position throughout northern India, and their languages displaced the earlier forms of speech, which seem to have been mainly Dravidian. There are many traces of Dravidian influence, notably the distinction between dental and cerebral letters, on the existing Aryan languages, of which there are twenty-seven, spoken by 257,000,000 people, or nearly three-quarters of the whole population of India.

The Indo Aryan vernaculars are divided into two main branches: an inner, stretching from Sirhind on the west to the confluence of the Ganges and the Jumna on the east; and an outer, which almost surrounds the inner. These two branches differ in many respects: the outer has a complicated grammatical structure, while the inner has almost abandoned inflections. The two branches are believed to be derived from two distinct waves of invasion which may have been separated by a considerable period of time. The principal languages of the inner branch are Western Hindi (38,000,000 speakers),

Rājasthānī (16,000,000), Punjābī (13,000,000), and Gujarātī (11,000,000). Those of the outer branch include, amongst others, Bengālī (53,000,000), Bihārī (37,000,000), Marāṭhī (21,000,000), and Oriyā (11,000,000). Eastern Hindi with 25,000,000 speakers occupies an intermediate position.¹

The repeated invasions of Pathans and Turks during the last millennium, though they have resulted in one-fifth of the population becoming Mohammedan, have had

¹ The figures for Bengālī, Marāṭhī, Gujarātī, and Oriyā, are those given in the census report. Those for the other languages are taken from *The Linguistic Survey of India*, as the Census Returns do not discriminate sufficiently between the different forms of speech.



IN THE KANGRA VALLEY NEAR SHAHPUR
Photo Indian State Railways

are in southern India traces of a physical type similar to that of the Australian aborigines, which must be more ancient than the type of the main body of the Dravidian speakers; and the belief is gaining ground that the Dravidian languages must have been brought to India at a very remote period by immigrants from the West, who may have been allied to the Mediterranean race. There are fourteen Dravidian languages, spoken by 72,000,000 people. The most important are Telugu, spoken by 26,000,000; Tāmīl by 20,000,000; Kanarese by 11,000,000; and Malayālam by 10,000,000. Dravidian languages prevail throughout southern India. Comparatively few speakers

comparatively little effect on the languages of India.

But the movements of these armies served to diffuse a widespread knowledge of the language spoken round Delhi (Hindustāni) which thus became a *lingua franca* over a great part of northern India. It is often written in the Arabic script and many Arabic and Persian words have found their way into the vocabulary; the grammar, however, has been very little changed, even in the artificial literary form which is known as Urdu.

The advent of British rule has had even less direct effect on the indigenous languages. They have, however, been greatly developed and standardized, owing to the literary activity which has resulted from the introduction of printing and the wide diffusion of education and, in particular, the revival of the study of Sanskrit, which stands to the modern Indo-Aryan languages in the same relation as Latin does to Italian. The action of missionaries in reducing various tribal tongues to writing and using them as a medium of instruction has given a new lease of life to many that were formerly in process of extinction. The Mundā languages, which had long since disappeared from the open plains, have thus obtained a new lease of life in the hilly tracts where they still survive, while in Assam, Khāsi has become so well established as a literary tongue that it is recognized in the examinations of Calcutta University.

As English is used as the medium for all higher education, the educated classes can speak it fluently. It has thus not only had an immense cultural influence, but has become the medium through which the people of different linguistic areas can communicate freely with one another. This has been, perhaps, the main factor in imbuing

the people of India with a sense of a common nationality.

LAW. The law in India, in the modern sense of the term, begins in A.D. 1765, when the Mohammedan Emperor Shah-E-Alum granted to the East India Company the right to collect the revenue of Bengal, Bihar and Orissa, in other words, the Diwanee rights. At that time there were Moslem courts in existence all over the Empire of India, including these provinces. There were civil and criminal courts. Each province was divided into so many districts. In each district there was a Quazi who administered both civil and criminal law, supervised all wakf or endowment, and acted as guardian of minors and lunatics. From his decision an appeal lay to Quazi-ul Quzzat, i.e. the judge of judges. His court may be identified with Mahkema Istinaf which used to sit in Murghidabad, Bengal. On difficult points there was a further appeal to the full court, presided over by Quazi-ul Quzzat. It was called Mahkema Tamiz and it also sat in Murghidabad. When the grant of Diwanee was made to the East India Company the administration of criminal justice remained under the control of the Nazim of Bengal, i.e. the Mohammedan governor of Bengal, while the revenue and civil administration came under the control of the East India Company, which had its headquarters in Calcutta.

In 1792 the famous regulations of Warren Hastings came into existence and the administration of civil revenue and criminal justice was organized. In all districts were set up Fowjdari (criminal), and Diwanee (revenue), and civil courts. From these, appeals lay to Sadar Diwanee Adalat and Sadar Jowjdari Adalat, which sat both in Calcutta and Murghidabad for a while, and ultimately in Calcutta alone. From



HIGH COURT, BOMBAY
Indian State Railways

Sadar Diwanee Adalat an appeal lay to the King in Council, i.e. the Privy Council in London.

In 1858 India was taken over by the British Crown, and in 1865 High Courts were established in all provinces, in Calcutta, Allahabad, etc. The Supreme Court which was set up in Calcutta to administer justice between the servants of the East India Company, and whose jurisdiction was afterwards extended to all the inhabitants of Calcutta, was abolished. In the towns of Calcutta, Madras and Bombay, however, where the East India Company settlements existed, the English practice was maintained, and the High Courts exercised both original and appellate jurisdiction, becoming Appellate Courts both in civil and criminal matters for Appeals from all districts. Each "district" of the Province had a District Judge who was the principal judge and under him were subordinate judges and munsifs. These Courts were to deal with matters of certain pecuniary value. For criminal matters there were magistrates in each subdivision of a district who controlled the police and dealt out justice themselves in certain cases. All grave offences went before the District and Sessions Judge who heard those cases with the aid of assessors or jury as the case might be. From his decision appeal lay to the High Court and, with special leave of the Privy Council, to the Privy Council. In all criminal matters arising in the "presidency" towns, i.e. Calcutta, Madras and Bombay, the High Courts had jurisdiction to grant leave to appeal to the King in Council also. The presidency magistrate dealt with criminal matters in these presidency towns, and from their judgments appeal lay to the High Court. On the revenue side as well as on the

criminal side the Collector and the District Magistrate had the control of all magistrates in their districts. There was also a Small Cause Court which dealt with ordinary matters of a certain value, and there was a revision proceeding to the High Court from their decision on points of law alone.

With the passing of the Government of India Act, 1935, a new court, the Federal Court, deals with constitutional questions arising under the present constitution.

Now, we come to the laws which were administered by the various courts. During the Mohammedan period, Mohammedan and Hindu civil law were administered, while in criminal matters as well as in matters of revenue, Mohammedan law was also administered. There are two main divisions of Mohammedan law: Sunni and Shia. Of the Sunni there are four schools: Hanafi, Maliki, Shafai and Hambali. While the Shia school has a great many principles peculiar to it, the chief difference between these two schools of Law consists in the primary notion of constitutional law. The Sunnis hold the view that as the system of Islam is based upon democracy, the chief of the state, i.e. the Caliph, may be any Moslem, though the Shafais hold that he must belong to the tribe of Quoraishi, while the followers of the Shia School lay stress on the Caliphate being confined to the house of Mohammed. In India, the Sunni law of the Hanafi school was in force until the time of Amjad Ali Shah of Oudh, when the East India Company insisted upon that ruler championing the Shia law. At present in India the Mohammedan law as such is in force, for the Sunnis, Sunni law, and for Shias, Shia law. Exceptions include the Bombay presidency, where a section of the people follow Hindu law in



GOVERNMENT HOUSE, CALCUTTA
Photo: Indian State Railways



THE MAHARAJA OF MYSORE ARRIVING AT THE PALACE ON THE GOLDEN CAPRISONED STATE ELEPHANT

Photo Mysore State

their domestic affairs, and the Punjab, where those who live outside towns obey Punjab customary law. In the N.W. Frontier Province also, customary law holds sway. As the policy of the British system of administration has been always to avoid interference with laws regulating the domestic relations of those who come within it, the decisive factor, wherever practical, is the law of the people. In the case of the Mohammedan it is Mohammedan law, of whatever school it may be.

The sources of Mohammedan law are: first the Koran, secondly, Hadith or the traditions of Mohammed, thirdly, Ijma, i.e. the decision of all the Moslems and Qiyas, and fourthly, according to both Hannifi and the Shie schools, Istehsan or Equity; or, according to the Malikj school, Isteslah or public policy. There were two notions of justice, namely (1) what was right between the parties, (2) what was good for the community at large. These notions gave rise to equity and to public policy respectively. This double conception of justice is accepted by Lord Bacon in his essay on justice. In constitutional ideas the British system seems to have borrowed from the Moslem system, just as Locke, who drafted the Petition of Right and the Bill of Rights, seems to have had the Caliphate in mind when negotiations

were going on between the Parliament and William of Orange. By the passing of the Veto Act in England the King and the House of Commons became supreme. This is exactly the position in Mohammedan Constitutional Law as it existed in the seventh century.

As to the Hindu law which is in force amongst the Hindu population of India, it can be divided into two sections (1) Mitakshara, and (2) Dayabhag. The first is the joint property system, i.e. father, son and grandson form a copartenary and are joint owners. In consequence, none of them has an absolute right to the property, and neither the grandfather, nor the father, nor the son can deal with the property separately. Women have a right to maintenance but Hindu law is not indulgent to them, and the amelioration of the condition of Hindu women must be put to the credit of Sir Thomas Strange and, later, the Privy Council in London. There are various schools under the Mitakshara, which applies to the whole of India excepting Bengal. There are differences which have given rise to the Dravida school, which is in force in the Madras Presidency, the Maharashtra school, which is in force in the Bombay Presidency, the Mithila school, which is in force in a certain portion of the province of Bihar,

and the Benares school, which is in force in Bihar, U. P. and C. P.

As regards the Dayabhag, i.e. the school of Hindu law which is in force in Bengal, it is a patriarchal system. The father is the head of the family and all the property belongs absolutely to him, as in the Mohammedan and the Christian systems. This is because Buddhism was in force in Bengal for a long time, and also because this province was industrially more developed than any part of India.

In certain parts of India, e.g. Malabar in south India, there still exists the matriarchal system, that is to say, a female is the head of the family and inheritance is through her. This is a remnant of the polyandry which existed there. In the Punjab and in the Frontier districts, where the agriculturists are to be protected, customary law is in force and the land belongs to the whole community. Laws have been passed to prevent moneylenders acquiring land from agriculturists without proper permission.

Now we come to British law which is in force in India. British law is the outcome of deep thought based upon the experience of judges, magistrates and others who have the welfare of the people at heart. For criminal matters there is the Indian Penal Code, which was drafted by Lord Macaulay and, after revision by Sir Barnes Beacock, became law in India. It is defective in certain particulars. There is the Criminal Procedure Code and there is the Law of Evidence. There are other acts too numerous to mention which regulate various aspects of the life of the people of India. The Workmen's Compensation Act (1923), was the first Act to touch on matters of labour. It has been since subject to modification. When the province of Oudh was acquired, Lord Canning, who became known as Clemency Canning, in order to protect the barons of Oudh, i.e. Talukdars, passed the Oudh Talukdari law.

There are now in existence various legislative councils instituted by the Government of India Act (1937). By this Act also the provincial legislature became free from all restrictive controls, and therefore it will be able to pass certain laws as an independent body. In addition, the All India Legislative Assembly will be able to make laws for the whole of India.

Previous to the 1937 Act the legal profession in India was divided into barristers, who had qualified themselves for the Bar in England, Vakils, who were the advocates during the Mohammedan period and continued during the British period, Pleaders, who practised in District courts and Mokhtars, who handled criminal and revenue

matters. Now, instead of the first three grades of practitioners, all become advocates, and the right of precedence is regulated by the date when they were enrolled in any of the High Courts.

There are law colleges in every province, where Indians qualify for enrolment as advocates in the High Court or the subordinate courts. In the Native States of India there are courts and practitioners both of which are independent of British India, and are regarded as foreign courts, though they derive a great deal of benefit from the enactments, both civil and criminal, in British India.

LAWRENCE, SIR HENRY. See article, Vol. V.

LAWRENCE, JOHN 1st BARON. See article Vol. V.

LAYPATRAI, LALA. See article, Vol. V.

LINLITHGOW, 2nd MARQUESS OF. See article Vol. V.

LITERATURE. Ancient Literature. The most obvious feature of ancient Indian literature is its vastness. To say that it is larger than the combined literatures of ancient Greece and Rome would not be quite adequate, as that would be true of works written in Sanskrit (the classical tongue) alone, and would leave out the large body of literature, e.g. the Jain and Buddhist scriptures, written in Prakrit (colloquial tongue). Perhaps the right scale for comparison is furnished by the *Mahabharata*, the longest poem on record, containing more than 100,000 verses, or about eight times the *Iliad* and *Odyssey* combined.

This stupendous literature embraces every aspect of human life, and comprises all the arts and sciences evolved by mankind since the dawn of history. Religion and philosophy are its special distinction, and mythology and folklore its most interesting feature. Poetry, drama, romance, annal, fable, law, economics, politics, grammar, philology, phonetics, mathematical and natural sciences, poetics, treatises on music and the fine arts—these and other subjects reached a stage of development in ancient India as is unparalleled in the history of any other single country. The one notable omission is history, which the ancient Indians never wrote. In literary merit it stands high and the earliest Indian literature is also the world's earliest.

A unique feature of this literature is the rich diversity of its spiritual content. But the greatest beauty of India's literature is the central unity of her national culture which has always permeated and integrated the almost bewildering diversity of her national life. Enunciated, at the beginning of her history, in the *Upanishads* and developing later into the system of life

known as Hinduism, this central unity has continued undisturbed to the present day.

The story opens with the four *Vedas* (*Rik*, *Saman*, *Yajur*, *Atharva*), composed about 2000 B.C. in the Punjab. These are mainly collections of hymns, religious, creative and lyrical in character. The various *Brahmanas*, *Aranvakas*, *Upanishads*, and *Sutras* that followed were expositions of rituals, metaphysical speculations on the nature of life and the universe, and treatises on theological and other subjects. They were composed when Aryan culture was spreading eastward and southward from the Punjab, on its way to the final absorption of the whole

The greatest of the lyric poems are: *Meghaduta* and *Ritusamhara* (Kalidasa); *Sringarasataka* (Bhartrihari); *Amarusataka* (?); *Sringaratilaka* (Kalidasa?); *Gulagovinda* (Jaydeva); *Ghatakarpura* (?); and *Chaurapamchasiha* (Bilhana). The best prose romances: *Dasakumaracharita* (Dandin); *Vasavadatta* (Subandhu), and *Kadambari* and *Harshacharita* (Bana). Drama: *Sakuntala*, *Vikramorvasi* and *Malavikagnimitra* (Kalidasa); *Mricchakatika* (Sudraka); *Ratnavali* (Sriharsha); *Mudrarakshasa* (Visakhadatta); *Venisamhara* (Bhattanarayana); and *Malatimadhava*, *Mahavira*, and *Uttararamacharita* (Bhavabhuti). The



STATE PALACE, BANGALORE

Photo Mysore State

of India. The Vedic period closed about 200 B.C., but the stream of religious literature of which it was the fountain head continued unabated. The literatures of Jainism and Buddhism had already partly appeared, and later ages added the works connected with the Vaishnava, Saiva, and Sakta religions, and with the six systems of philosophy known as Karma, Vedanta, Samkhya, Yoga, Vaisesika, and Nyaya. *Bhagavad-Gita* and *Bhagabata Purana* are the greatest works of this later religious literature.

The great epics, the *Mahabharata* and the *Ramayana* were written about the fifth century B.C., but the strictly secular or literary period did not begin until after the Christian era. It continued until the Mohammedan conquest of India in the twelfth century. This literature is chiefly in verse, and its principal achievements were in national and court epic, lyric and didactic poetry, drama, folk tale, fable, and romance. There are eighteen Puranas or semi-epics, and the principal works of Mahakavya (court or artificial epic) are: *Raghuvamsa* and *Kumarasambhava* (by Kalidasa); *Bhaktikavya* (by Bhartrihari); *Kirtarjuniya* (Bharavi); *Naisadhiya* (Sriharsha); and *Sisupalavadha* (Magha).

Panchatantra, *Hitopodesa*, *Sukasaptati*, *Vetalapamchavimshati*, *Vikramacharita*, *Kat-hasarilsagara* and the Buddhist *Jataka* are the best collections of folk-tales and fables.

Modern Literature. Ancient Indian literature was written in Sanskrit, which, in both secular and religious matters, was authoritative for Hindus in all parts of India as Greek and Latin were for all Europeans. The classical period in Indian literature came to a close in the twelfth century A.D. when, with the passing away of Hindu rule, Sanskrit ceased to be a living language. The comparatively small body of literature written in Persian during the following six centuries of Mohammedan rule might also be termed classical, though it was essentially derivative in character and had little influence outside the royal courts.

The early years of Mohammedan rule were the seed-time of the modern or vernacular literatures of northern and central India, the most important of which to-day are Bengali, Hindi, Urdu, Marathi, and Gujarati. The disruption of Sanskrit that was brought about by Mohammedan rule gave these literatures the necessary room to grow. They were also helped by the fact that Persian, the new classical tongue introduced

by the Mohammedans, soon became as moribund as Sanskrit for lack of vital contact with the land of its birth. The vernaculars were the sole living organs for both Hindus and Mohammedans, and the new literature that grew up was the work of members of both communities, though Hindus predominated. The common needs of the two communities even evolved the new vernacular, Urdu, which was a compromise between Persian and Hindi, with its vocabulary largely Persian, its grammar Hindi.



CHAR MINAR ARCHWAY IN HYDERABAD
This masterpiece of Kuth Shah architecture
is 300 years old.
Photo: M. Mitter

But though these literatures grew up in the gap left by Sanskrit, they were indebted to it for almost everything; for their vocabulary, grammar, systems of rhetoric and prosody, literary types and modes, and almost all the themes on which they subsisted until the nineteenth century. The same is also true of the southern Indian vernacular literatures, such as Tāmil, Telugu, Malayālam and Kanarese, with the difference that their vocabulary is mainly Dravidian. A further exception is that Tāmil has a history going back to pre-Christian times, and may be accorded classical status because of the high standard of develop-

ment attained by it. It was less influenced by Sanskrit than the others, because the Tamils, chief of the Dravidian peoples, possessed a civilization as early as, if not earlier than, the Aryan, and were the last to be Aryanized.

Urdu was mainly under Persian influence, and as it grew around the royal Mohammedan courts, it was secular in inspiration. The other literatures arose out of the theistic movement in the Hindu religion known as Vaishnavism, the chief feature of which was the cult of Bhakti or adoration of a personal god. The movement has a long history, and received its most authoritative exposition in the third century B.C. if not earlier, in the famous Sanskrit poem "Bhagavad-Gita." But it reached its highest watermark between the twelfth and sixteenth centuries A.D., through the preachings of Ramanuja, Ramananda, Madhvacharya, and Chaitanya. Since then it has become the most important branch of Hinduism, both in the number of adherents and in the impulse it has given to literature.

The Bhakti cult, and consequently the literature it has inspired, manifested itself in three main forms: Siva-worshipping, Rama-worshipping, and Krishna-worshipping. In some parts of India, especially Bengal, there was a fourth form, viz. the worship of Sakti, which produced some of the best Bhakti literature, notably the works of Mukundaram and Ramprasad. The best Siva-literature is to be found in Tāmil, in the works of Tiru Vulluvar, Tirujnana Sambandar, Apparswami, Sundaramurti, and Manikka Vasahar. Rama-literature was more copious, and had, among the most outstanding contributors, Ramananda, Nanak, Kabir, and Tulasi Das, all of whom wrote in Hindi. But the Krishna-worshipping form of Bhakti was the most widespread, and inspired works of the greatest literary merit. Sur Das and Mira Bai were the greatest Krishna-poets in Hindi; Namdev, Ramdas, and Tukaram in Marāṭhī; and Narasimha Mehta, Nākar, and Premanand in Gujarātī. The finest flowering of the Krishna cult was in Bihar and Bengal, in the works of Vidyapati, Chandidas, Govinda Das, and the many later poets who wrote under the stimulus given to Vaishnavism by Chaitanya. Their theme is the love of Krishna and Radha, than which there is nothing dearer to the heart of India. Krishna is a cowherd, Radha a princess, and their passionate encounters, amidst scenes of great idyllic beauty on the banks of the river Jumna, occasion some of the finest love-poetry India has ever produced. Running through the story is the allegory that Krishna is the god of love in human disguise, Radha is the

human spirit, and that the divine and the human are restlessly seeking completion through union with each other.

In their best moments the Krishna-Radha poets of Bengal touch great emotional depths, and the best works of the other writers mentioned above are as good as work of the kind can ever be. But, judged as a whole, Indian vernacular literature prior to the nineteenth century suffers from lack of vitality, variety, and intellectuality. Its almost exclusively religious character is responsible for that. The impulse to write came primarily from religious, not artistic or literary, motives. The authors were, as a rule, saints or devotees who had very little interest in life and the world. With the exception of the long narrative poems were not written to be read or recited, but to be sung as devotional songs or hymns. There was no prose, no literature of thought or knowledge, of social, economic, political or any other consciousness except the devotional and the erotic.

Since the nineteenth century, however, the literatures have been rapidly acquiring substance and vitality. The end of the old feudal order and the rise into power of the new middle class created by British rule were the main reasons of this. The introduction of the printing press in that century brought literature out of temples and royal courts and placed it within the reach of a wide public. It also finally broke the oral tradition and made conditions favourable for the growth of prose. Since then the literatures have rapidly developed in many directions, but the fact that India had to wait for the printing press nearly four hundred years longer than England will in itself explain the enormous difference, of both quality and quantity, that exists between the literatures of those two countries.

English education, originally introduced with the object of creating a class of Indian clerks and junior civil servants who would cost less than Englishmen going out to India on the same jobs, has served a much higher purpose by becoming the principal modernizing and vitalizing force of Indian literature. The English language has given access not only to English literature, but through translations to the literature of Europe. Bengali was the quickest and most wholehearted in its response to Western influence, with the result that it has now become the premier Indian literature in output, original power and influence. It has produced a large number of able writers, the best known of whom are Raja Ram Mohun Roy, Bankim Chandra Chatterjee, Madhu Sudan Dutt, and Romesh Chandra Dutt, of the nineteenth century; and Sarat Chandra

Chatterjee and Rabindranath Tagore of the twentieth. The last is of international repute for having been awarded the Nobel Prize some years ago. Most of these writers are available in English translation, as is Sir Mohammed Iqbal, who writes in Urdu and is the best known contemporary poet after Tagore.

The minor vernacular literatures, such as Oriyā, Assamese, Punjābi, Sindhi, Bihāri, and Kashmiri, can hardly be said to have entered the modern period yet, and continue to reproduce the outworn themes and modes of Sanskrit and Persian. But the bulk of work produced by the major literatures previously mentioned bears the mark of Western influence in some form or other. The devotional poems of Tagore, which are Indian in thought or sentiment, have a European form and technique. There can be no doubt that the future development of Indian literature will lie in the direction of further and more intensive assimilation of Western influence.

So far, except among a small number of Indian intellectuals, the best of English or European literature cannot be said to have arrived in India yet, or, having done so, to have struck roots there. The European literature that has had the most influence there is of the inferior class found in European railway bookstalls and suburban libraries.

LORIS. See article, Vol. V.

LUCKNOW. See article, Vol. V.

MADRAS. See articles, Vol. V.

MADURA. A city on the Vaigai River in the Carnatic. It is celebrated for its magnificent temple, built in the sixteenth century. There are important textile industries. Population (1931) 182,018. See illustration on page 5092.

MAHABHARATA. See article, Vol. V.

MAHANADI RIVER. It rises in Bastar, near Borai in the Central Provinces, and for some 150 miles it flows north-east until it is joined by the Seonath. It then flows generally south-east through Orissa, though sometimes varying direction, and receives a number of tributaries before entering the Bay of Bengal through the district of Cuttack.

MAHRATTAS. See article, Vol. V.

MAHSEER. See article, Vol. V.

MAJITHIA, SARDAR DYAL SING (1849-1898). Social reformer and philanthropist. Dyal Singh was born at Benares in a Sikh noble family in the year when the Punjab was annexed by the British. He visited England when of age, and on his return to India he began to take interest in the teachings of Brahmo Samaj, founded by Raja Ram Mohan Roy, and soon became an active leader of the theistic movement in the Punjab. He was also deeply interested

in the social welfare of the people. The cause of liberal education was especially dear to his heart. He founded the Dyah Singh College and other institutions in Lahore. He also started *The Tribune*, a Liberal organ, in 1881, to educate public opinion.

MALABARI, BEHRAMJI MERWANJI (1853-1912). Born in Baroda of poor Parsee parents, Malabari became an orphan when quite young. He was altogether a self-made man. He first won recognition as a poet, receiving the congratulations of Lord Tennyson. He took to journalism and became editor of the *Indian Spectator*, a Bombay weekly. The

tiring energy and devotion to the cause of education.

Twice President of the Indian National Congress, he was also for a number of years an elected member of the Indian Legislative Assembly. Though not a Non-co-operator in practice, he approves of the movement in principle as the only possible and ultimate way of forcing the hand of the Government.

MANGO. See article, Vol. V.

MANU. See article, Vol. V.

MARSHALL, SIR JOHN HUBERT (born 1876). Eminent English archaeologist, who has played an important part in conserving the ancient Indian monuments. Sir John was born in Chester and educated at Cambridge. He made journeys of exploration in Greek lands, and later he did remarkable work in excavation in various parts of Europe. In 1902 Lord Curzon appointed him Director-General of Archaeology in India.

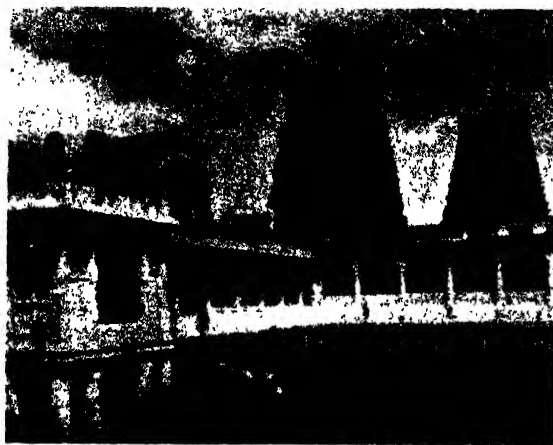
Sir John Marshall was at the head of the Archaeological Department for twenty-nine years, and after that for some time carried on special duties. He was responsible not merely for the excavation of many places hitherto unknown and lost to view, such as the pre-historic site of Harappa, and other places of later historical interest like Nalanda and Taxila; but he was instrumental in bringing the general condition of the Indian monuments of every period—Brahminical, Moslem, and others—to a state of perfection, which rendered them perhaps the best preserved series of monuments in the world.

In the three-volume monograph on *Mohenjodaro and the Indus Civilization*, edited by Sir John Marshall, results of his prolonged study of the materials as they have come to light are given. See *ARCHAEOLOGY* Vol. IX, page 5033.

MEHTA, SIR PHEROZESHAH MERWANJI (1845-1915). One of the ablest and most sagacious political leaders and thinkers of his time in India.

He was born in Bombay of respectable middle-class parents. His university career was brilliant, and Sir Alexander Grant, the Chancellor, secured for him a scholarship for further studies in England. While he was studying for the Bar in London, he became imbued with the Liberalism of Gladstone and Bright.

Sir Pherozeshah's public life began on his return to India in 1867, when he was enrolled as an advocate of the Bombay High Court. But the practice of law did not absorb all his attention.



GREAT TEMPLE AT, MADURA

In the centre of the temple is the great lily tank, for ceremonial bathing. The two intricately carved towers are known as "Goparas." There are four of them altogether.

Photo: Indian State Railways

paper under his editorship gained a considerable reputation.

Malabari identified himself with the social reform movement. His invaluable notes on *Infant Marriage and Enforced Widowhood of Hindu Girls*, published in 1884, were highly praised by social reformers. The Government took action with the famous Age of Consent Bill, raising the marriageable age of Indian girls from 10 to 12 years.

In later life, Malabari edited *The East and West*, a monthly journal. Two philanthropic institutions owe their foundation to his efforts—the Seva Sadan (for social, educational, and medical service in India) and the Sanatorium at Dharampur in the Himalayas.

MALAVIYA, PANDIT MADAN MOHAN (born 1861). Malaviya was born in Allahabad of an orthodox Brahmin family. He gave up a good practice at the Bar to devote himself to public work, particularly in the fields of religion and education, and the Hindu University at Benares is a monument to his an-

Sir Pherozeshah was a member of the Bombay Corporation during a period of more than thirty-five years, and thrice he was elected its President (Mayor).

He was twice President of the Indian National Congress, of which he was one of the founders, and continued to be one of its directing forces till his death.

MENAKA (in private life, MRS. LEILA SOKHIEY). This Brahmin lady of aristocratic birth was the first Indian woman of enlightenment to undertake the revival of the Indian dance. She was born and brought up in Calcutta, but completed her education in England. She discerned the intrinsic beauty of the traditional Indian dance and devoted her talents to restore it to its pristine beauty and purity. She braved all opposition and appeared on the stage in India in 1925. The foot rhythm with its intricate timing, *abhinaya bhava*—gesture and emotional expression, *anghara* and *karna*—the technique of the use of the body and arms, the distinguishing features of the classical Indian dance, were again seen in all their magnificence and elegance.

Menaka's dancing is of purely Indian origin, being based partly on folk-dances and partly on the ancient plastic dancing which was practised in India before the importation of *nautch* with the Mohammedan invasion.

MINTO, 4th EARL. See article, Vol. V.

MODY, SIR HORMUSJI PESTONJI (born 1881). A prominent Indian industrialist. He was born in Bombay of Parsee parents. He has been a leading member of the Bombay Millowners' Association for a number of years, and was its Chairman in 1927 and from 1929 to 1934. He was President of the Indian Merchants' Chamber in 1928-29 and has been President of the Employers' Federation of India since 1933. He is a director of the firm of Tata & Sons. A Liberal in politics, he has, for a number of years, been a member of the Indian Legislative Assembly. He represented the Government of India in the trade negotiations with the Manchester Chamber of Commerce in 1933 and was one of the two signatories to the Indo-Lancashire Trade Agreement, known as the Mody-Lee Pact.

Sir Hormusji Mody has written several books, including *The Life of Sir Phirozeshah Mèhta* and *Political Future of India*.

MOHAMMAD ALI, MAULANA (1878-1931). Born at Moradabad of Moslem parents, he was educated at Alighra and Oxford. Returning to India in 1904, he was in the State service of Baroda for eight years. He then interested himself in politics, and in 1911 he went to Calcutta and began to publish a weekly journal, *The Comrade*.

Mohammad Ali, together with his brother,

Shaukat Ali, was interned under the Defence of India Act for the duration of the World War on the ground that they had expressed sympathy with the enemy.

The agitation against the demolition of a mosque at Cawnpore gave Mohammad Ali an opportunity to attack the administration; and, in 1920, he led a Khilafat deputation to England to protest against the Cawnpore incident, and to ask for a revision of the peace terms with Turkey. In both matters he was successful. Lord Hardinge, the Vice roy, taking the initiative, ordered the reconstruction of the mosque, while the British Government eventually conceded more indulgent terms to Turkey through the Treaty of Lausanne.

Maulana Mohammad Ali was Mahatma Gandhi's right-hand man during the Non-co-operation movement launched by the Congress. Later he was arrested for incitement to violence, convicted, and sentenced to two years' imprisonment.

In 1930 he declared himself committed to complete independence for India and a federal constitution, but not the severance of friendship between Britain and India.

MOHMANDS. See article, Vol. IV.

MONGOOSE. See article, Vol. VI.

MORLEY, 1st VISCOUNT. See article, Vol. VI.

MUKERJI, SIR RAJENDRA NATH (1854-1936). Mukerji was born in Bhabla. He started business as a petty contractor, later joining Martin & Co in Calcutta, of which he soon became senior partner. Later he became the head of a great engineering combine in Calcutta. He was Sheriff of Calcutta twenty-five years ago. Later he was Chairman of the Industrial Commission, President of the Bengal Retrenchment Committee, and connected with a number of educational and charitable institutions. He was also one of the founders of the Calcutta Club, which was started as a meeting place for Europeans and Indians on equal terms.

MUKERJI, SIR ASUTOSH (1864-1924). Indian mathematician, judge, and scholar. Sir Asutosh was born in Calcutta. His extraordinary talent and originality as a mathematician were manifested quite early in life. While yet a schoolboy, he was a member of the London Mathematical Association. Later he became a Fellow of the Royal Society of Edinburgh and a member of various other mathematical societies.

His love for mathematics did not prevent him from paying attention to other subjects. English, Sanskrit, philosophy, history, law, and science claimed his attention. He was Tagore Professor of Law at Calcutta University, and for nearly twenty years was a judge of the Calcutta High Court.

Soon after his appointment as a Fellow of Calcutta University at the age of 25, he was elected to the Syndicate, and his active association with the University, of which he was Vice-Chancellor from 1906-1914, terminated only with his death.

MUNSHI, KANAIYALA MANEKLAL (born 1887). An author of outstanding merit in Gujarati literature. Born in Broach (Gujarat) in a Hindu family, he is an advocate of the Bombay High Court, a Senator of Bombay University, a member of the provincial legislature, and editor of *Gujarat*, a vernacular monthly.

Munshi's works may be classified under the heads: social and semi-political novels, historical romances, dramas based on ancient historical tradition of India, social dramas, and short stories.

His creative art has brought life and beauty to Gujarati fiction and drama, and he has few equals among modern writers of Gujarati prose. One of his recent books is *Gujarat and Its Literature*.

MUSIC. Divine and semi-divine origins are claimed for the art of music in the ancient Sanskrit Sangit-shastras (treatises on music) Brahma, the Creative Aspect of the Hindu Trinity, sang the first song; Vishnu (in His incarnation as Krishna), Who sustains all creation, played His songs of love on the Bānsri (flute) on the banks of the Jumna; Shiva, in Whom all creation has its ending, the Third Aspect of Eternal Rest, danced the Tāndava Nritta (dance macabre). Every spring the Hindus still worship Saraswatee, the goddess in their pantheon who presides over music and learning.

Be that as it may, there is no doubt that the art of music has been practised in India from the Vedic times (about 2000 B.C.). The hymns of the Rīg Veda, the first of the four compilations on which the Hindu religion is based, were recited to three tones. In the Sāma Veda, the third compilation containing hymns to be chanted during sacrificial offerings of the Indo-Aryans, there are directions of vocal modulations, intonations, and trills complete with proper musical notation.

Originating in rituals, music, in due course, developed into a highly cultivated art. Creative faculty of the artists found expression through improvisations on given melody-themes which were in time classified as the Ragas and the Raginis of Indian music.

Singing, dancing, and playing of various musical instruments were performed with consummate skill in the royal court which Prince Gautama renounced in the fifth century B.C. to become the Buddha and the founder of the great religion which bears his name. At the time of the Gupta empire in India (A.D.

320-650), Kalidasa, the Shakespeare of India, wrote his dramas, in which music, in all its three branches of song, dance, and mime, played a great part. By that time the fame of Indian music had reached beyond the Himalayas. Behram Gor, the Persian Emperor, invited Hindu musicians to his court. Through Persia the music of the Hindus penetrated into Arabia, Greece, and even as far as the Spanish empire of the Moors, returning to the land of its origin, full of new graces and much lyrical charm acquired in its wanderings, with the Mohammedan invaders somewhere about the twelfth century A.D.

As in other forms of art, so in music of India a change occurred with the assimilation of Mohammedan culture. In northern India, where this culture exerted its greatest influence, the Hindu music was intermixed with Persian style, and much of the traditional technique was modified. In the south, foreign intervention was less powerful, and music retained its traditional Aryan theories and practice more or less intact. The northern system is known as the Hindustani style, and that of the south is called the Karnatakī (Carnatic) system. The principal points of difference between these two systems lie in their respective recognition of primary scale and of root Ragas (melody-modes).

Indian music, which had attained a high degree of scientific precision and artistic perfection (including recognition of acoustic principles) by the early centuries of the Christian Era, reached its peak of excellence in the court of the great Mogul Emperor of India, Akbar, about the close of the sixteenth and the early part of the seventeenth century. With the decline of the Mogul empire in India, the art of music also declined, until this most ancient culture of the land became but a sad stock-in-trade of the dancing girls and wandering beggars. The last fifty or sixty years have, however, brought about a revival of the interest of the people in music. Schools are being established, ancient manuscripts are being studied and reprinted, and musical conferences are being held.

Indian music in all its forms is fundamentally melodic in form and devotional in character. But it is not altogether devoid of harmony. Its harmony is not of the consonance of simultaneous notes, but of the memory of a note that lingers in the ear and is merged in the flow of the succeeding note in the continuous progression of sound that forms a melody. "The musician sings or plays the interval as much as the note."

The musicians of ancient India discovered seven distinctive notes among natural sounds, and these seven notes formed the technical foundation of their science of music.

They also noted the minute sound intervals between these seven notes, and incorporated them in their notation to create as perfect a sound-imitation of Nature as possible. These minute shades of tones are known as *Srutis* (that which is heard, but in music the minutest sound particles audible to human ears between two successive notes). There are twenty-two *Srutis* recognized in Indian music. Each *Saptaka* (group of seven) or octave (the eighth note being but a repetition of the first note in a higher scale) contains seven notes and twenty-two *Srutis*.

These seven notes are named *Shadja*, *Rishabha*, *Gāndhāra*, *Madhyama*, *Panchama*, *Dhaivata*, and *Nishādha*; and collectively they are known as the *Sārgām*. For musical notation these notes are abbreviated, as. *Sā*, *Re*, *Gā*, *Mā*, *Pā*, *Dhā*, and *Ni*. The notes in their natural forms are known as *Suddha* (pure); the chromatics are called *Vikṛita*, which may be *Komal* (flat) or *Tivra* (sharp),

and *Atikomal* (very flat) or *Atitivra* (very sharp). *Shadja* (*Sā*) was taken from the cry of the peacock. Four *Srutis* are attached to it and are known as *Tivra*, *Kumudvatī*, *Mandā*, and *Chhandodhuti*. *Rishabha* (*Re*) is in imitation of the note of a bird known as *Pāpiha* (alternatively, of the bellowing of the ox). It has three sub-tones called *Dayavati*, *Ranjani*, and *Ratikā*. *Gāndhāra* (*Gā*) was taken from the bleating of the goat, and has two sound intervals, *Raudri* and *Krodhi*. *Madhyama* (*Mā*) came from the call of the crane, and four shades of tone are attached to it. *Vajrika*, *Prasārini*, *Pṛiti*, and *Mārjani*. *Panchama* (*Pā*), imitated from the call of the *Koyal* (Indian blackbird) has four *Srutis*: *Kshiti*, *Rakta*, *Sandipani*, and *Alāpani*. *Dhaivata* (*Dhā*) was taken from the neighing of the horse, and has three intervals: *Mandanti*, *Rohini*, and *Ramya*. *Nishādha* (*Ni*), from the trumpeting of the elephant, has two *Srutis* known as *Ugra* and *Kshobhni*. These early experts in the physical science of sound had discovered that the human voice at its best could register only three *Saptakas* (octaves) in ascending and descending volumes. There are, therefore, three

octaves in Indian music. Musical instruments, which were constructed to imitate and accompany human voice, were also made to contain three *Saptakas* only. These *Saptakas* are known as *Mandra*, *Madhyama*, and *Tāra* (lower, middle, and higher).

The Indo-Aryans had discovered that certain melodies (i.e. certain progressive sounds in continuous flow through certain successive notes and their *Srutis*), when sung or played at certain seasons of the year and hours of the day and night, could produce agreeable effects on the minds of the musician and the listeners. These modes of melodies were, in time, classified, and became the

media of expression of various *Rasas* or sentiments, such as love, mirth, tenderness, anger, heroism, terror, disgust, and surprise. These melody-modes are known as the *Rāgas* (thematic expressions of sentiments through melody). There are six principal *Rāgas* known as *Sri Rāga*, *Basanta*, *Bhairava*, *Panchama*, *Megha*,



DANCING GIRLS

In a debased form, they preserved Indian music and dancing from complete extinction during two hundred years.

Photo Indian State Railways

and *Natta Nārāyana*. (Carnatic system of southern India recognizes seventy-two root *Rāgas*.)

The rich imagination of the Hindus, not content with the perfection of the art of melody, gave forms to these and other subsidiary *Rāgas*. Thus, the meditation for *Sri Rāga* contemplates on the form of a demi-god with his nymphs gathering fresh blossoms in a grove. Its appropriate time is the evening of the dewy season. *Basanta Rāga*, sung in the spring, is described as being a golden-coloured youth, dressed in yellow garments, and with ornaments of mango-blossoms. *Bhairava Rāga* is described, like *Shiva*, with the Ganges springing forth from his head, the crescent moon and the mystic third eye shining on his forehead, and dressed in white. Morning time in the autumn is appropriate to this *Rāga*.

Panchama Rāga, of expressive eyes and clothed in red, is the melody of love and youth. It is to be sung at the close of night in the summer. *Megha Rāga* (also known as *Mallār*), as its name implies, belongs to the rainy season. His dress is of the blue-grey of the clouds, his voice is grave like the echo



MUSIC

1. Sadhu or ascetic with curiously shaped horn. 2. Band from Kathiawar. 3. Band of the Kota tribe from the Nilgiri Hills.

Photos Indian State Railways; M. Milward

of the thunder, and his violet eyes reflect the lightning. He is mounted on an elephant. *Natta Nārāyana Rāga* is the melody of the winter. He is a mighty warrior, riding through the battle-field on a charger, his body covered with blood.

These six Rāgas are described as male melody-modes. To each is attached five (or six) companions. They are called Rāginis or female modes. Further sub-divisions of these Rāgas and Rāginis are known as Putras and Bhāryas (sons and daughters-in-law). The Rāgas and Rāginis vary in accordance with the numbers of the notes of the octave which are used to form their scales. Grace notes are employed to embellish these Rāgas. These grace notes, known as *Murchchhanās*, are the ascension and descension of the seven notes in the scale in a continuous flow. Grace is not accidental in Indian music, but an essential part of it. It supplies the chiaroscuro of the musical composition. Another important mode of grace is known as *Gamaka*, which is a tremulous reiteration of the same note.

The Rāgas and Rāginis, ornamented with *Murchchhanās* and *Gamakas*, and performed in rhythm, become *Sangita* or music. *Laya* or rhythm in Indian music signifies the duration of time from the beginning of a composition to its end. There are three

kinds of *Laya*, namely, *Bilāmbita* (slow), *Madhya* (medium or normal), and *Druta* (rapid). *Laya*, measured to regular and symmetrical arrangement of units of time, is called *Tāla* or metre. The time-units are known as *Mātrās*. In singing and in instrumental music the artist is usually accompanied on different varieties of drums for metric precision. These drums are tuned to the keynote of the singer or the instrumentalist, and are sounded by the palms, fingers, or sticks according to the type.

There are various styles of singing, the two principal classical styles being *Dhrupad* and *Kheyāl*. The former is heavy, and consists in dwelling upon each note for a length of time, during which period the *Srutis* of the notes are purely defined and correctly intoned; while *Kheyāl* is a much lighter style, in which the notes merge into one another in a quicker flow. Great artistry and skill are necessary for their proper execution. Some of the more popular styles are known as *Tappa* (used for lyrical ditties), *Bhajan* and *Kīrtan* (for devotional folk-songs), *Thungrī* (for popular lyrics), *Gazal* (for Urdu and Persian verses set to simple music, with simple *Tāla* or metric system). One of the prominent characteristics of Indian music is its expression of the more tender sentiments. Though the *Chāran San-*

gita (minstrel music) of the Rajputs introduced stirring modes to a certain extent during the Mahommedan rule in India, martial music is met with very seldom.

MYSORE. See article, Vol. VI.

NAGPUR. A city of India, capital of the Central Provinces, it is the hub from which radiate five railway lines connecting it with all the important points in the country. There are textile industries, but it is as a distributing and administrative centre that Nagpur is chiefly important. Population (1931) 215,165.

NAIDU, MRS. SARAJINI. See article, Vol. VI.

NAIR, SIR C. SANKARAN (1857-1934). Born in Malabar of a Hindu middle-class family, and educated at the University of Madras; he attained great eminence as a lawyer and advocate.

From the inception of the Indian National Congress, Nair gave it his warmest support, and he presided at the thirteenth annual session of the Congress at Amraoti.

In 1907 he was appointed Advocate-General, and later was made Judge of the Madras High Court. In 1915 he became Education Member of the Viceroy's Executive Council. One of the first results of the appointment was the Government of India circular to the provincial governments regarding the education of women.

From 1919 to 1921 he was a member of the Secretary of State's Council in London. Afterwards he was elected a Member of the Council of State, the Upper House of the Central Legislature, and in 1928 he was appointed Chairman of the Central Legislative Committee with the Simon Commission.

NANA SAHIB. See article, Vol. VI.

NAOROJI, DADABHAI (1825-1917). Born in Bombay of a Parsee priestly family, he became an ardent supporter of Indian nationalism.

In his earlier years he was a college professor, and later a Dewan, when he purged Baroda State of its corruption. His political activity began in 1855, when he started, with the co-operation of the late W. C. Bonnerji, the London Indian Society to educate the British public as to their responsibilities as rulers of India. Later he started a larger association, known as the East India Association (still existing), which was to admit all who were interested in the welfare of India.

Naoroji gave evidence before the Parliamentary Committee on Indian Finance, known as the Fawcett Committee. The most important point which he sought to establish before the Committee was the poverty of India and the very high incidence of taxa-

tion in the country. In 1873 he issued, in pamphlet form, his facts and figures, calling it the *Poverty of India*, and seven years later he revised the brochure and amplified it, calling it the *Condition of India*. He was the first Indian to become a Member of Parliament, being returned for Central Finsbury at the General Election of 1892. He presided over the Indian National Congress on three occasions.

NATURAL RESOURCES. When one is reviewing the natural resources of the Indian Empire, its water supplies, fisheries, forests, and mineral deposits, water must receive primary consideration because of its direct bearing on the prosperity of the people. The larger proportion of a population of over 353,000,000 is engaged in agriculture, devoting to it an almost incredible amount of human labour, which is often rendered futile by the vagaries of a capricious rainfall.

Water for Irrigation. Every season in some part of India, precipitation is insufficient to mature the crops; and, it is officially stated, between the area in which the annual rainfall is always reliable, on the one hand, and that in which it is so scanty that agriculture is impossible without an irrigation system, on the other, there exist nearly 1,000,000 sq. miles, which, in the absence of irrigation, are not secure against the uncertainty of the seasons and the dreaded visitation of famine.

A large part of this is cared for by the cultivators themselves by means of wells, tanks, and every kind of water-raising device. Thus in 1935, more than 2,500,000 wells were in actual use, while in the Madras Presidency alone there are about 30,000 tanks. Reservoirs and canals were made long before the days of the British Raj, yet later developments in these directions are amongst its proudest achievements; through them parched regions of vast extent have been brought under the plough, sparsely cultivated tracts enriched, deserts turned into the sites of thriving communities, and the fear of devastating food shortages to a great extent eliminated.

Fifty years ago the lands irrigated by Government agency measured 10,500,000 acres; by 1934-35 this had grown to nearly 30,000,000 acres.

The water is taken for the most part from rivers fed by the perpetual snows of the Himalayas. The length of the canals and distributaries leading it to the fields is, in all, about 75,000 miles, and the estimated value of the crops grown by its aid, in 1934, £68½ millions. The total capital cost of the Government irrigation works now amounts to £113,250,000, while the net return received on this outlay in 1934-35 was 4.9 per cent.

India, then, has developed her water resources for irrigation purposes to an extent unparalleled elsewhere. The Punjab leads with 11,000,000 acres so protected, followed by Madras (7½ millions), Sind (over 4,000,000) and the United Provinces (nearly 4,000,000). By these means the Punjab has been transformed from one of the poorest into one of the most prosperous provinces. See AGRICULTURE; INDUSTRIES AND MANUFACTURES, Vol. IX.

Hydro-electric Power. The water resources are also used for the generation of electricity in suitable localities. Amongst such enterprises are the great Tata works supplying power from the Western Ghats to the mills and railways of Bombay, and the Uhl River Works, which use the fall of two Himalayan streams to electrify parts of the Punjab. The falls of the Cauvery have been harnessed for years, and later developments on the same river include the Mettur Hydro electric Scheme, to be completed in April, 1938. The potentialities of Mettur as an industrial centre are now considerable. In Mysore there is a string of towns and villages, from one end of the State to the other, enjoying the boon of electricity for lighting and power. The Ganges Canal Scheme again, uses irrigation channels for the provision of electric energy. Projects under consideration include the electrification of the eastern districts of Oudh and a wide section of the North-West Frontier Province.

Fisheries. The sea and river fisheries are sources of natural wealth to which organized, scientific attention has been directed during

the past twenty years. Fish, besides forming a staple food of much of the population of Bengal, Burma, and the maritime districts of the Peninsula, are cured and sold on a large scale for use elsewhere.

The fishing communities form a particularly poor and illiterate section of the proletariat, intensely conservative and suspicious of change; but their outlook and position are being gradually improved by various socio-economic agencies such as schools, training institutes, and co-operative societies. One authority has stated that the sea fishing craft of to-day scarcely venture beyond the 5 fathom contour, though there are fully 40,000 sq. miles of continental shelf within the 100 fathom line lying off the coasts of India and Ceylon, where operations might safely be carried on for six months of the year.

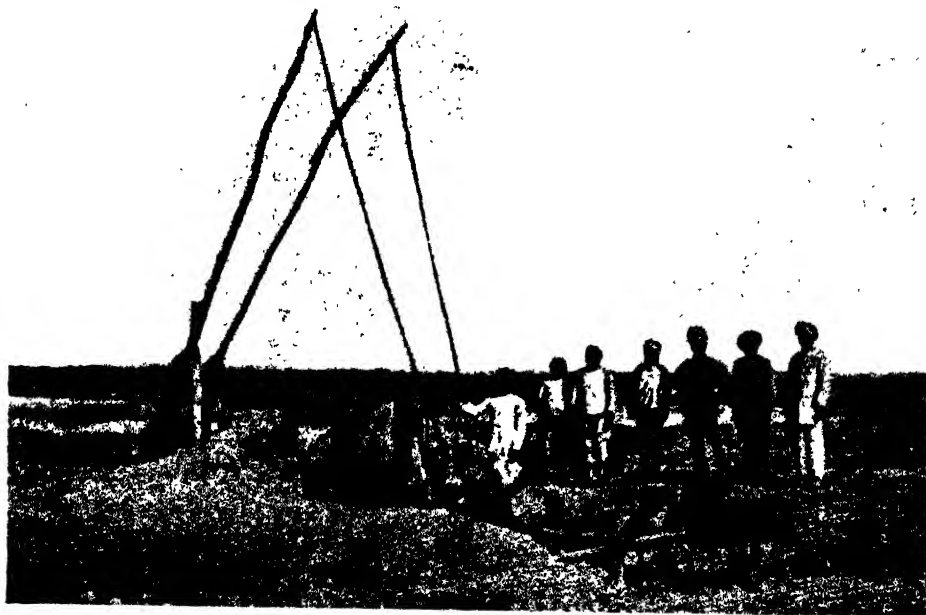
Forests. The forests cover 282,664 sq. miles or more than one-quarter of the whole of British India, ranging from the arid scrubs of Baluchistan to the mangrove swamps of Burma; from the rain-soaked, evergreen forests of the south-west coasts to the dense bamboo jungles of Assam; from the savannas of the Central Provinces to the pine woods of the Shan States. The hill forests of the Himalayas, Assam, and Burma form a group apart, in which cedar and pine, spruce and silver fir, oak, magnolia, and laurel flourish.

Important revenues are yielded by the forests, amounting sometimes in the case of Burma to 20 per cent of the Provincial total, but the world trade depression has seriously



FISHING WITH NETS IN KASHMIR

Photo Fox



SALT WELLS IN INDIA

The brine is hauled up by these primitive cranes and then turned into vats, where the water is evaporated.

Photo Keystone

diminished the profits in recent years. In the year 1929-30, the net profit accruing to the country as a whole from its forest estates was £1,875,000, but by 1934 this had fallen to £581,000. In spite of this, however, the exports of India's forest produce in the financial year 1933-34 were valued at approximately £3,321,000.

But the value of the forests is not to be reckoned entirely in the profits of a commercial balance sheet, for they play an essential part in the social economy of millions of the peasantry by furnishing grazing grounds for cattle, sheep, and goats; supplying humus for the overburdened soil, litter and firewood for the cultivator; as well as wages for his labour at convenient seasons. Gratuitous grazing rights, free timber and fuel, costless concessions for grass cutting and for the collection of an amazing variety of minor forest products—these are amongst the items which, widely and generously distributed, never appear in the financial statistics. Forests are also maintained to check the leaching and erosion of the soil, and to ameliorate the distribution of water supplies: indeed they have been artificially created in some instances for these purposes.

Thousands of individual tree species are known, of which several hundreds are of

economic importance. See PLANT LIFE, Vol. IX, p. 5112.

Apart from timber, the forests yield many other products, including resins and turpentine; grasses and bamboos for paper manufacture, canes, in which a large trade exists; and tanning materials, exported in great variety. Lac, the basis of shellac, the hardest resin known, is virtually an Indian monopoly and the secretion of a small insect which thrives on certain Indian trees. Here must also be included the dye stuff *cutch*, a product of a species of *acacia*, exported chiefly from Burma, the valuable sandalwood of south India; the fibres and flosses, of which *kapok* is an example; the oil seeds and edible fats; the spirit obtained from the *mahua* (*Bassia latifolia*), a widespread tree in central India; the essential oils distilled from aromatic grasses, and a host of drugs and medicinal herbs.

In the Central Forest Research Institute, founded at Dehra Dun in 1906, systematic investigations are carried on into every branch of silviculture, botany, entomology, and chemistry as they affect forest life; while an economic branch devotes attention to wood technology, timber testing, seasoning, preservation, and workshop practice. Provincial research officers, stationed throughout the length and breadth of India,

work in co-operation with this central organization; and in an adjoining college, Indian candidates are trained for the forest service.

The conservation of the forests is of no less importance to many parts of India than the development of its water supplies, and the future will assuredly reap the benefit of the wise and far-sighted policy which has now been in operation for about sixty years.

Minerals. India is richly endowed with most of the minerals which form the basis

drilling dates from 1887. To-day Burma yields four-fifths of an annual total of 322,000,000 gal., the remainder being drawn from oilfields in Assam and the Punjab.

Gold mining is at present confined to the Kolar field of Mysore, where it began in 1871. From that time to the end of 1934, gold to the value of £79,500,000 has been taken almost entirely from one vein of 2 to 4 ft. in thickness. Silver occurs at the Bawdwin Mines in the Shan States and, since 1909,



RUBIES

Left. Excavating ruby-bearing gravel from river bed in Burma. *Right.* Cutting the gems with primitive tools.

Photos U & U

of modern civilization, though her position as a large-scale exporter of agricultural products tends to obscure both the size and diversity of the deposits themselves. The nominal annual value of the minerals raised, £24,000,000 in 1928 and £18,000,000 in 1934, is of little assistance in conveying a correct impression of their influence, either on her own industrial activities or on those of the outside countries in which they are used.

After the United Kingdom, India is the greatest coal-producing unit of the British Empire, with a normal annual output of about 23,000,000 tons, 98 per cent of which is consumed at home. The reserves of workable coal within 1000 ft. of the surface, in the Gondwana coal-fields of the Peninsula alone, are estimated at 20,000,000,000 tons. The other mineral fuel, petroleum, has been won in Burma for centuries, where modern

89,500,000 oz., worth £11,000,000, have been recovered.

About 150-200 miles west of Calcutta, in Singhbhum and the adjoining State of Orissa, is one of the major iron-ore fields of the world, where enormous tonnages of high grade ore are readily available. India's iron and steel industry, in the development of which Indian capital has played a predominant part, now makes over 1,320,000 tons of pig iron and 597,000 tons of steel per annum. Indian iron is exported to Japan, the United States of America, the United Kingdom, and many other countries. The immense iron ore reserves, the great and growing home demand for steel manufactures, the accessibility of the Eastern markets, the efficiency of the companies concerned—all presage rapid growth.

Manganese ores; used mainly in steel-



NATURAL RESOURCES

1. Felling sandalwood trees in Mysore forests; much sandalwood is exported to China, and there are local sandalwood oil factories. 2. Cutting granite kerbstones and slabs at Doddballapur Quarry, Mysore. There are vast surface resources of granite in this part of India. 3. Coffee estate. In the small clearing is a planter's bungalow. 4. Irrigation canal of the Cauvery River scheme. 5. Primitive apparatus which slings out and hauls in the fishing nets in Cochin. The fishing industry is but poorly developed considering the vast resources. 6. Ore bins at a mine in the Kolar gold fields of Mysore. Between 1871 and 1934 gold to the value of £79,500,000 was taken from this field. 7. Krishnarajasagara Dam and Reservoir on the Cauvery River, Mysore

Photos: Indian State Railways, Mysore State

making, are mined extensively in the Central Provinces, Madras, Bombay, and elsewhere, and at times India exports more of this material than any other country in the world. Other important minerals associated with steel manufacture are wolfram and chromite. The former, an ore of tungsten, is found in large quantities in Lower Burma, the chief source of the Allies' supplies of this martial mineral during the World War; the latter is exported from Baluchistan, Mysore, and Singhbhum.

Copper ores are mined on a large scale in Singhbhum, where a copper-bearing "belt" with many ancient workings has been traced for 80 miles. In the Bawdwin Mine of the northern Shan States they are associated with natural compounds of lead, zinc, antimony, silver, nickel, and cobalt, in one of the largest ore bodies of its kind known anywhere. Over 1,000,000 tons of metallic lead, valued at over £21,750,000, have been extracted here since operations commenced in 1909. The mining and dredging of tin ore is increasing in Lower Burma, where the value of the annual output now approaches £750,000.

Turning now to the non-metallic minerals, nearly 2,000,000 tons of salt are obtained every year from sea water along the coasts in suitable places, from lake brines in Rajputana, and from salt mines in the Punjab and North-West Frontier Province. The mica mines of Bihar and the Nellore district of Madras produce most of the world's supplies of this mineral, which is essential to the electrical industry as an insulating medium. Of minerals useful to agriculture, saltpetre—once an Indian monopoly—is still made and sent abroad to some extent, while mineral phosphates occur in Singhbhum and other districts. Most of its cement requirements are now made in the country, whilst the resources of building stones, road metal, brick and tile clays, limestone and the like, are far greater than any possible demand. In the important group of refractories, ceramic and glass-making materials, there are extensive deposits of pottery earths, china clay, and kaolin; feldspar, quartz, and fire clays; magnesite, sillimanite, zircon, graphite, and glass sands. The mineral colours are represented by ochres and oxides, the abrasives by corundum and garnet.

A list of Indian minerals of present or potential value, though by no means exhaustive, must include the large and, at present, almost untouched deposits of bauxite, an ore of aluminium, situated in the Central Provinces, Bombay, Bihar, and Kashmir, the asbestos and barytes deposits of the Cuddapah and Kurnool districts of Madras, the monazite and ilmenite-bearing

sands of the Travancore coast, the marbles of Rajputana, and the gem-bearing gravels of the ruby mines region in Upper Burma.

Paradoxical though it may appear in the case of a country where agriculture is so predominantly the national occupation, India has been listed by the International Labour Office as one of the eight important industrial States of the world. That she is unusually well equipped for further progress in mining and metallurgy, and in the many subsidiary industries which depend upon them, should be apparent from this brief survey of her mineral resources.

NAWAB. See article, Vol. VI.

NAWAZ, BEGUM SHAH. Eldest daughter of the late Sir Mohammed Shafi, she was born in Lahore. She received her education in Queen Mary's College, but, as a Moslem of high rank, even there observed strict *purdah*. In 1911, at the age of 15, she was married to Mian Shan Nawaz, barrister and scholar.

The Begum, undeterred by *purdah*, began to take an active interest in the social affairs of her own community after leaving college, and it was at her instance that the All-India Moslem Conference passed a resolution condemning polygamy.

In 1920 she definitely came out of *purdah* and started unhampered on her career of social and educational reform.

The Begum was the first woman to be elected Vice-President of the 42nd Social Reform Conference in 1929. She was one of the three women delegates to the first Round Table Conference on Indian constitution in London in 1931, and later, the only woman delegate to the third Round Table Conference in 1933. She was invited to attend the League of Nations sessions at Geneva as collaborator in 1932, and was again the only woman member of the Indian delegation to the Parliamentary Joint Committee on Indian reforms in 1934.

NEHRU, PANDIT JAWAHARLAL (born 1889). The best known Indian leader after Mahatma Gandhi. The Pandit is the first to be elected President of the Indian National Congress for two consecutive years (1936 and 1937), and the second to be elected for the third time.

He was born in Allahabad of Kashmiri Brahmin stock. Brought up in England, he received his education at Harrow, and later at Cambridge and at London, where he was called to the Bar. On his return to India he practised at the Allahabad High Court.

Having spent much of his life in England, he at first felt out of place in Indian surroundings, but after a time he realized that he had a duty to the poor of India.



TEA PLANTATION IN SOUTHERN INDIA
Photo U. & U.

At both the sessions of the Congress at Lucknow and Bombay in 1936, over which the Pandit presided, he advocated a Socialist programme, and resolutions were adopted in

furtherance of the cause of peasants and workers.

The campaign which he has been carrying out has introduced a realism wholly new to Indian politics.

During recent provincial elections in preparation for the introduction of provincial autonomy, Nehru introduced for the first

time in the political history of India the method of whirlwind election campaigns by aeroplane, motor-car, and train. Between the end of the annual Congress Session in February and polling in the middle of March, he visited nearly every province. How much of the success of the Congress Party at the elections was due to him may, perhaps, never be fully realized.

NEHRU, PANDIT MOTILAL (1861-1930). Indian political leader. A Kashmiri Brahmin, born in Allahabad, he took to the profession of law, but he suspended his practice in pursuance of the Congress call of Non-co-operation.

The Pandit started his political career as a Moderate in 1907, when he was nearly 50. In 1919 he became President of the Congress. When, in 1920, Mahatma Gandhi began active propaganda to convert the people to the theory and practice of Non-co-operation, Nehru developed into an extremist.

Mr. Nehru joined with Mr. C. R. Das when the latter started the Swaraj (Council-entry) Party within the Congress. He was the leader of the Swaraj Party (whose policy was the employment of obstructionist tactics) in the Indian Legislative Assembly. He became President of the Congress once again in Calcutta in 1928. His career in the Central Legislature came to a close in 1929, when Gandhi succeeded in reconverting the Congress to his old theory of boycott of the legislative bodies.

He was Chairman of the All-Parties Conference in Bombay in 1929. Many changes advocated by him have since been included in the Government of India Act, 1935.

NERBUDDA, RIVER. See article, Vol. VI.

NICHOLSON, JOHN. See article, Vol. VI.

NICOBAR ISLANDS. See article, Vol. VI.

NILGIRI HILLS. The elevated plateau at the southern point of the range known as the Western Ghats before it is cut by the

Palghat pass. The plateau stretches some distance inland and is of considerable height, generally over 6000 ft. Dodabetta, the highest peak is 8760 ft. It rises near Ootacamund, the summer residence of the Governor of Madras, which itself stands over 7000 ft.

NIVEDITA, SISTER (1867-1911). One of the very few European scholars who have identified themselves completely with the life and spirit of Hindu civilization. Nivedita, which means "dedicated," was Miss Margaret Noble before she was admitted into the Order of Ramakrishna. She was born in London, her father being the Rev. S. R. Noble, a Congregationalist minister.

Attracted by the teaching of Swami Vivekananda, she became his disciple and went out to India in 1898 and dedicated herself to the service of its people. In 1904 she published her greatest work, *The Web of Indian Life*. Her other books include *Cradle Tales of Hinduism*, *An Indian Study of Love and Death*, and *The Master as I Know Him*—the latter is a devoted account of Swami Vivekananda.

NORTH-WEST FRONTIER. See article, Vol. VI.

ORCHHA. See article, Vol. VI.

OSMAN ALI, HIS EXALTED HIGHNESS MIR (born 1806). An Indian ruler, he is the seventh Nizam of Hyderabad, succeeding his father in 1911. He was educated privately.

Since his accession to power a large number of reforms have been carried out under his guidance. He began as an autocrat, with supreme power vested in him. A few years later he decided to effect a radical change in the constitution, and formed an Executive Council and Representative Legislature. The administration is now carried on by a regular system of departments on lines similar to those followed in British India.

Education has made a great headway during the last twenty-six years of his reign. The number of schools has trebled in the State, and there is now hardly a village without a school. For higher education, the Osmania University has been founded, which imparts instruction in all the faculties through the medium of the student's vernacular (Urdu), English being taught as a compulsory language.

In consideration of his services to the Crown during the World War he was granted the title of "His Exalted Highness."

A new treaty was concluded in November, 1936, between the King-Emperor and the Nizam, recognizing and re-affirming the latter's sovereignty over the Berars. In recognition of his sovereignty, the Nizam now holds the dynastic title of His Exalted



PANDIT NEHRU

Photo: Fox



DALHOUSIE SQUARE, CALCUTTA
Photo Indian State Railways

Highness the Nizam of Hyderabad and the Berars. The Berars remain a part of the Nizam's dominions in perpetual lease to the Crown. See HYDERABAD.

OUTRAM, GENERAL. See article, Vol. VI.

PADISHAH. See article, Vol. VI.

PAGODA. See article, Vol. VI.

PALMYRA PALM. See article, Vol. VI.

PARAMAHAMSA, SRI RAMKRISHNA (1834-1886). Gadadhar Chatterji, as he was known before renouncing the world, was born in a poor Brahmin family at Kamarpukut in Bengal. Even when quite a boy he was intensely religious. The form which his religious passion took was a fervent worship of the goddess Kali, the divine Mother of the Universe. Paramahansa believed that God could be seen and all religions were true, being in their inner essence identical. After his death a Ramkrishna Mission was founded to spread his teachings.

PARSEES. See article, Vol. VI.

PATEL, VITHALBHAI JAVERBHAI (1871-1933). Born a peasant in Gujarat, Vithalbhaji began his career as a lawyer, but he devoted much of his time to civic affairs. He was the head of the Nationalist Party in the Bombay Municipal Corporation for a number of years, eventually being elected its President.

Patel was also a member of the Bombay Legislative Council, where he adopted obstructionist tactics with a view to creating a deadlock over Government Bills with

which he and his Congress Party were not in sympathy.

In 1925 he entered the Indian Legislative Assembly as a member of the Congress Party. The same year he was elected President of the Assembly, and as such discharged his duties with conspicuous ability.

In 1930 he resigned his membership of the Assembly to join again in active political life. Later, he was sentenced to imprisonment for disobeying a Government order.

PATIALA. See article, Vol. VI.

PEOPLE. At the time of taking the last Census in 1931, the population of India (excluding Burma) had reached a total of over 338,000,000, i.e. nearly one-fifth of the estimated numbers of the whole human race. During the ten years 1921-31 the increase in population was over 32,000,000. The distribution of the population between the major Provinces and States with their respective areas are shown in the table on page 5106.

Races. The varying physical characters of the Indian peoples are related to the successive invasions of India in past centuries. Certain types stand out very distinctly, such as Rajputs, Gurkhas, Marathas, Pathans, Tamils. Broadly speaking, one may say that the Dravidians, the inhabitants of the peninsula proper, i.e. south of the Vindhya Mountains, are the descendants of the most ancient races; while in the north, extending both to the west and to the east, they have

**AREAS AND POPULATIONS OF PROVINCES
AND LARGER STATES
(Census of 1931)**

	Area in Square Miles	Population
INDIA (excluding Burma)	1,575,187	338,170,632
<i>I. Provinces of British India¹</i>	862,679	256,859,787
Assam	55,014	8,622,251
Bengal	77,521	50,114,002
Bihar and Orissa	83,954	37,677,576
Bombay and Sind	123,679	21,930,601
Central Provinces and Berar	99,920	15,507,723
Madras	142,277	46,740,167
North-West Frontier Province	13,518	2,425,076
Punjab	99,200	23,580,852
United Provinces	106,248	48,408,763
Chief Commissioners' Provinces ²	62,308	1,852,836
<i>II. States and Agencies (Total)</i>	712,508	81,310,845
Baroda	8164	2,443,007
Gwalior	26,367	3,523,070
Hyderabad	82,698	14,436,148
Kashmir	84,516	3,646,243
Mysore	29,326	6,557,302
Rajputana Agency	129,059	11,225,712
Central India Agency	51,597	6,632,790
Western India States Agency	35,442	3,999,250
Punjab States Agency	31,241	4,472,218
Travancore	7625	5,095,973
Cochin	1480	1,205,016

¹ This table does not separate the new province of Orissa from Bihar, or the new province of Sind from Bombay.

² These include Ajmer-Merwara, the Andaman and Nicobar Islands, Baluchistan, Coorg, and Delhi.

been displaced by and mingled with the descendants of the invaders who poured into India from the second millennium B.C. onwards, "Aryans," Scythians, Turks, Afghans, and Mongols.

One may still distinguish as ethnographical types—

1. The Dravidians, the short, dark-skinned and broad-nosed people of the south, of which the Tamils are an example.

2. The Indo-Aryans of the north, especially in the Punjab, Rajputana, and Kashmir, tall and light-skinned, with narrow, generally finely-cut nose. To this class belong, among others, the high-caste Rajputs, an ancient and historic warrior race famous for their valour and chivalry.

3. The Turko-Iranians of the North-West Frontier Province and Baluchistan, with relatively fair complexion, and long, prominent nose.

4. The Mongoloid type, short in stature, with broad head, characteristically flat face, and often slanting eyes, to be found among the people of Assam and the eastern Himalayas, and the Gurkhas of Nepal.

To these should be added—

5. The Scytho-Dravidians in the west,

comprising the Maratha Brahmins and Coorgs of western India, a mixture of Scythian and Dravidian elements.

6. The Mongolo-Dravidians to the east, including most of the inhabitants of Bengal and Orissa, and representing a mixture of Mongol with Dravidian.

7. The Aryo-Dravidians to be found in the United Provinces and Bihar by varying admixtures of Indo-Aryan and Dravidian types.

Occupation—Urban and Rural. Village Life. To whatever race and whatever religion they belong, the vast majority of the Indian peoples, both in Provinces and States, are peasants who depend on the land for their livelihood. In the Census of 1931, only 11 per cent of the population were classified as urban, Bombay being the most urbanized of the provinces. In the whole of India there were only thirty-seven towns with more than 100,000 inhabitants. The two great cities of Calcutta and Bombay, the chief centres of commerce, shipping, and industry, are in a class by themselves.

The table below shows the population of the twenty largest Indian towns—

**PRINCIPAL TOWNS OF INDIA
(Census of 1931)**

	Population
1. Calcutta with Howrah (Bengal)	1,485,582
2. Bombay (Bombay)	1,161,383
3. Madras (Madras)	647,230
4. Hyderabad with Secunderabad, etc. (Hyderabad)	466,894
5. Delhi with New Delhi, Shahdara, etc. (Delhi)	447,442
6. Lahore (Punjab)	129,747
7. Ahmadabad (Bombay)	313,780
8. Bangalore with Civil and Military Station (Mysore)	306,470
9. Lucknow (United Provinces)	274,659
10. Amritsar (Punjab)	264,840
11. Karachi (Sind)	263,565
12. Poona (Bombay)	250,187
13. Cawnpore (United Provinces)	243,755
14. Agra (United Provinces)	229,764
15. Nagpur (Central Provinces)	215,165
16. Benares (United Provinces)	205,315
17. Allahabad (United Provinces)	183,914
18. Madras (Madras)	182,018
19. Srinagar (Kashmir)	173,573
20. Patna (Bihar)	159,690

It is always to be remembered that the main occupation of the people of India is agriculture, which absorbs 67 per cent of the workers. Only 16.7 per cent, according to the census, are engaged in trade and industry, including transport. Of the rest, 1.3 per cent are employed in administration and the public forces (army, navy, air force, and police), and 1.7 per cent in the professions and liberal arts, under which heading are included those connected with education.



PEOPLE OF INDIA—I

Strolling players dressed for their show at a Mela or festival. 2. Bhat women. Bhats claim, without truth, to be Rajputs, and are known as peddlers and cheapjacks throughout the Bombay Presidency. 3. Chenchu village or "penta" in the Amarabad Hills. The Chenchus are aboriginal forest dwellers who still use the bow and arrow. 4. Todas milking sacred buffalo. A dying race, now numbering only 500, they live in the Nilgiri Hills. They have a curious marriage custom, for they allot three women to every five men. 5. Women at Darjeeling. Those on the left have mongoloid features, on the right is one more typically Indian. 6. Women at well in Bombay Presidency. 7. Haran-Shikari man and wife. Found in Hyderabad and the central Deccan, these people act as hunters and trappers. 8. Udaipur, the filling of the waterpots.

Photos: Indian State Railways

religion, medicine, law, letters, arts, and sciences. The remaining 13.3 per cent are for the greater part engaged in domestic service.

India is in all things a land of contrasts, and at one end of the social scale one finds the greatest luxury among the princes, wealthy landowners and industrialists; while among the masses of the people, both in town and country, there is dire poverty. In the towns the poor live crowded up in dark, ill-ventilated rooms, but 89 per cent of the total population live in rural areas, and more than half in villages of less than 1000 inhabitants. All over northern India the village consists of a compact group of small dwellings built of mud. In Bengal and in the south are found straggling hamlets and more scattered homesteads. The holdings are very small, generally less than 5 and seldom more than 12 acres, and the peasant makes but a bare subsistence by his labour. He is often crippled by indebtedness; his possessions are of the fewest and his standard of living very low. On the other hand, except in the cold season in the north, he needs to spend little on clothing, fuel, or housing.

The Indian village is an orderly community with a very ancient tradition. The authority of the headman is respected, and there is often a village council or *panchayat* to settle local matters. The larger villages have their own artisans and their own menials, and are self-contained and self-supporting. The urgent needs of the Indian village in respect of sanitation, water supply, health services, education, improved communications, and improved methods of agriculture have come to be more and more fully recognized of recent years, and many schemes of rural reconstruction have been set on foot and are being actively carried out in nearly all the Provinces of British India and in some of the States.

Literacy. The illiteracy of the peasant is one of the great handicaps to the rapid spread of knowledge which would improve his economic position. In spite of the efforts of education departments, the spread of literacy in India is very slow. Although the number of literates increased by over 5,000,000 between 1921-31, this only resulted in an increase of 1 per cent in literacy owing to the extremely rapid growth of the population. At the last census the percentage of males over 5 years of age who could read and write in any language was 15.6, and of females only 2.9. The backwardness of the women, due to conservatism and social customs, impedes the educational progress of the people as a whole. The Indian States of Cochin, Travancore, and Baroda are far

ahead of the British Indian Provinces in this respect, but it is to be remembered that they deal with very much smaller areas, and that other Indian States are far behind some of the Provinces of British India. The percentage of male literates in Cochin is 46 and of females 22, and Travancore is not far behind.

In the table below are given the main figures for both Provinces and States—

NUMBER PER 1000 WHO ARE LITERATE
All ages 5 and over

	Persons	Males	Females
India (as a whole)	95	156	29
Cochin	317	460	220
Travancore	289	408	168
Baroda	209	331	79
Western India States			
Agency	125	204	43
Bengal	111	182	33
Madras	108	188	30
Bombay	108	176	31
Mysore	106	174	33
Assam	93	136	22
Central Provinces	66	120	12
Punjab	63	100	17
United Provinces	55	94	11
Bihar and Orissa	53	98	8
Hyderabad	50	85	12
N.W. Frontier Province	49	80	12
Gwalior	47	78	11
Rajputana Agency	43	76	6
Kashmir	40	70	6
Central Provinces States	23	42	3

Social Life. Over two-thirds of all the peoples of India (i.e. about 240,000,000 of them) are united by the bond of Hinduism, which is far more than a religion. It includes a social system which has no parallel in any other country, and which regulates the whole structure of Hindu society. That structure is based on the institution of caste, one of the oldest characteristics of Hinduism. By it the whole Hindu community is divided into hereditary groups from the Brahmin or priestly caste downwards, and these groups have in the course of time become so far subdivided that their number now runs into thousands, and each trade and occupation has come to have a caste of its own, besides the many caste divisions among the agricultural classes. The members of one caste group may not, strictly speaking, eat with the members of another caste, or marry outside their own caste. A man may lose his caste by breaking the caste rules, but he can never rise into a higher caste than the one into which he was born. Although among the educated the rigidity of caste observance has been largely relaxed of recent years, among the masses of the people caste still



PEOPLE OF INDIA—2

1. Mohammedan family of the northern Frontier. 2. Aborigines of the lower Nilgiris beside their primitive huts. 3. Group of Todas leading away a buffalo to be slain. This is one of their funeral rites. 4. Hindu women of Rajputana. 5. Sikhs of the Punjab. 6. Sadhus, Indian ascetics who are supported by the alms of devout Hindus. 7. Young Brahmin from Travancore. 8. Toda, showing the toga-like dress and the beehive living hut. 9. Shepherd from near Agra.

Photos: Indian State Railways; M. M. Seward

largely determines both a man's occupation in life and the society in which he will move. All over India one still finds members of a caste group living close together and plying the same craft, the knowledge of which will be handed down from father to son. Thus there will be a caste of weavers, of potters, of barbers, of wheelwrights, of goldsmiths, of gardeners. Under the conditions of modern India there is an increasing tendency for young men to enter other than their own caste occupations, especially agriculture, trade, and industry. At the upper end of the scale, the Brahmins or priestly caste are by no means all priests any longer, but they still hold a position of great influence due partly to their hereditary gifts of intellect and leadership, and partly to the respect and awe on religious grounds in which they are still held by the masses of the people.

At the lower end of the scale, connected with the Hindu community and yet not full members of it, comes that great body of people, estimated at some 50,000,000 in the 1931 census, who are known as the Depressed Classes or Scheduled Castes. Their touch, even their very shadow, is pollution to an orthodox Brahmin of the old school; hence they are sometimes referred to as the Untouchables. In many parts of the country, especially in the south, they are debarred from entry into Hindu temples, and may not use public wells and tanks. It is roughly true to say that all over India, water will not be accepted from them by higher castes. They include the sweepers who do all the sweeping and scavenging, the *dhobis* or washermen, the *chamars* who skin dead animals and tan hides, some of the cultivating classes of the south, and many other groups; in fact, they themselves are divided into numerous castes. Governments are now insisting that publicly-managed schools should be open to members of the Scheduled Castes instead of their having to go to special schools, or being forced to sit outside the ordinary classroom. A small, but still a very small, number are educated, and with

education they have found leaders and are beginning to assert their claim to equality, a claim which has the support of social reformers in both Provinces and States.

The old basis of Hindu family life is the "joint family system," according to which the sons on marriage do not set up a separate household, but the wife comes to live in the husband's home. In the upper and middle classes it used to be not at all uncommon for thirty or forty persons, including members of the older generation, to be thus living under one roof, but under the changed conditions of modern life, the system has largely broken

down. Intimately connected with it is the custom of early marriage, which affects the whole social system. A semi-religious importance is attached to child marriage by orthodox Hindus, and the marriage of Brahmin children is often arranged while they are still infants, and is irrevocable, although the young people may not neces-



BUSINESS QUARTER, TRICHINOPOLY

• Photo - Indian State Railways

sarily live together until they are of a reasonable age. The average age of marriage in India has been steadily rising among the educated classes, but it has been estimated that still 40 to 50 per cent of Indian girls are married by the time they are 15; and this applies to the masses of the people, Mohammedan as well as Hindu. In 1929 the Child Marriage Restraint Act, commonly known as the Sarda Act, was passed with the object of stopping child marriage by penalizing the marriage of girls under the age of 14 and of boys under the age of 18, but, in practice, the Act, which does not go so far as to forbid such marriages or make them illegal, has proved very ineffective up to the present. It has done little to check the evil and the cruel suffering and ill-health which are its accompaniment.

Another serious consequence of child marriage is the large number of young widows. According to Hindu custom they may not remarry, though they may be mere children. In spite of the efforts of social reformers, widow remarriage among caste Hindus is still extremely rare, though there is no prejudice against a widower remarrying.



ABORIGINES OF INDIA

1. Kathodi woman. The Kathodi is a jungle tribe from the Western Ghats. 2. Toda woman from Ootacamund. A dying race, the Todas now number only 500. 3. Mathura woman from Narayanpore. The curious headdress is peculiar to this nomad tribe. 4. Irula boy. The Irula is one of the most primitive tribes and is found in the Nilgiri Hills. 5. Gond man. The Gonds, who number over 5,000,000, are from the Central Provinces. They use the bow and arrow. 6. Bhat woman. A nomad tribe of peddlers and cheapjacks. 7. Chenchu girl. The Chenchu live in small settlements in the forests of the Amrabad Hills. 8. Korwa woman. The Korwas are ill-famed as a tribe of professional criminals, though they are ostensibly basketmakers or craftsmen. 9. Lamani man. The Lamani is a nomad tribe whose members specialized in pack-carrying before the coming of modern transport. They are beginning to settle in the Deccan. 10. Bhil man. The Bhils inhabit the Ajanta Hills and have done so at least since the fifth century. 11. Toda man. 12. Haran-Shikari or Pardhi man. Once their tribal profession was hunting and they are still often employed for this work.

Photos taken from sculptures by Mrs. Margaret Mead.

The lot of the widow is often very hard, as she does not normally inherit money from her husband's estate, only the right of maintenance in his family. In 1931 there were just under 20,000,000 Hindu widows, of whom 250,000 were under 15 years of age.

Marriage for girls is almost universal in India, not only because it is considered the

duty of parents to get their daughters married, but because there is an excess of males over females in the population, an excess which in 1931 amounted to 10,000,000.

A Hindu marriage is regarded not as a contract, but as a sacrament, and is indissoluble. Under no circumstances can a wife obtain a divorce, but the husband who

wishes to marry another wife can do so at any time. Polygamy is allowable according to both Hindu and Mohammedan law, but in the latter case the number of wives is restricted to four. In practice, there is very little polygamy in India at the present day (roughly, eight co-wives to every 1000), except among some of the princes and wealthy landowners, both Hindu and Mohammedan.

Among the Mohammedans, who number some 77,000,000 in India, widow remarriage is allowed, and Mohammedan law is more favourable to women than is Hindu law, both in respect of inheritance of property and possibility of divorce. The great disability of Indian women has been the custom of *purdah*, i.e. the seclusion of girls and women after the age of 8 or 12 from all men, except the members of their immediate family. The practice of *purdah* has also been adopted by a large number of Hindus, especially in the north, but each year more and more women of the educated classes are discarding it.

Family devotion and affection are outstanding features of Indian life, and, in spite of all her disabilities, the Indian woman in the home often exerts an influence and authority which is unquestioned.

All over India, weddings are the great event in family life and religious festivals in the life of the community as a whole. Wedding celebrations often continue for several days. Even among the poor they are marked

by processions, feasting, and music, and an amount of money will be spent on them which is out of all proportion to the income of the head of the family, and which frequently casts him for years into the clutches of the moneylender.

Religious festivals are many, especially among the Hindus, though some of them are only observed locally. They are made the occasion of general holiday, and in the towns whole families, arrayed in their best, throng the streets. Religious processions, the playing of Hindu music outside a mosque, or the sacrifice by Mohammedans of cows (which are sacred to the Hindus) have often led to communal riots and bloodshed between Hindus and Mohammedans. But, in general, the members of the two great communities and of the smaller minorities—Christian, Sikh, and Parsee—who go to make up the millions of India's population, live together in harmony as peaceful and law-abiding citizens.

PERTAB SINGH. See article, Vol. VI

PESHAWAR. See article, Vol. VI

PIG-STICKING. See article, Vol. VII.

PLANT LIFE. The physiographical features of India are responsible for an extremely varied flora, adapted to the deserts of Sind and Rajputana, the semi-desert region of the Deccan, the rain-swept areas of Assam and the Malabar Coast, the cold arid plateaux of eastern Kashmir, and the great mountain range of the Himalayas towering above the snow line



VEGETATION

Left: Shillong. Nearly 5000 ft. above sea-level, it is in the Khasi Hills in Assam. Its climate is, for India, cool and bracing. The pine and other such vegetation flourish. *Right:* Outside Travancrum, the capital of Travancore, S. India. Facing the Arabian Sea, and with a high mountain system, the climate is hot and moist. Coconut and areca palms abound.

Photos: Indian State Railways



PLANT LIFE

1. Temperate hardwoods in the foothills of the Himalayas. At the edge of the tree line the climate is sometimes severe and sub-tropical trees cannot survive in it. 2. Water lilies in the Holy Tank at Kurukshetra. 3. Palms fringing a lake near Calcutta. The thatched huts are the homes of villagers. 4. Cluster of large mangoes. The mango is a luscious and nutritious fruit. 5. Packing custard apples, popular Indian fruits. 6. Sparse vegetation at the head of the Kangra Valley in the Punjab

Photos: Indian State Railways

The main region of India extends from the foothills of the Himalayas to Cape Comorin, excluding the Malabar coast. It is divisible into three well-marked sub-regions, the trans-Indus desert area of the Punjab and western Sind; the plain of the Ganges, including western Rajputana and the Punjab east of the Indus; and the main part of the Peninsula, comprising the Deccan, together with the eastern part of central India.

In the sandy wastes of Sind the vegetation in the main consists of cacti, such as the prickly pear, and date-palms. Eastwards, in western Rajputana and more so in the Punjab, conditions gradually become moister

and, while in Rajputana such trees as occur are stunted specimens, in the Punjab quite a number of trees and shrubs flourish, enough to make the countryside attractive. In early summer may be seen the pendulous yellow blossoms of the amaltas or Indian laburnum, and the jacaranda with its feathery foliage and blue flower clusters recalling those of the horse-chestnut. A little earlier appear the bright red flowers of the Indian coral and the dhak, two characteristic Indian trees, alike known as "flame of the forest." These, like the Indian laburnum and two common trees, the karanj and shisham, are members of the order *Leguminosae*. The karanj has pale lilac flowers and drooping

leaves rather like the laburnum. The shisham, one of India's commonest trees, grows to a height of 70 ft. and yields valuable timber. The farash, closely allied to the tamarisk, is conspicuous on poor soil where other trees will not grow, and favours brackish ground impregnated with salts.

Two of India's best known trees are the pipal and the banyan, both spreading, fig-bearing trees with aerial roots, belonging to the order *Moraceae*. The pipal is common round temples and is sacred. The banyan is larger, and in Bengal reaches a height of 80 ft. It spreads over an immense area and its aerial shoots take root in the soil to give extra support. The eucalyptus trees which have been introduced from Australia to the Punjab are now a conspicuous feature. They also flourish on the drier eastern slopes of the Ghats in southern India.

Most of the trees of the Punjab occur all along the Gangetic Plain, but in the humid low-lying country of Bengal they are supplemented by luxuriant groves of mangoes, figs, and palms. The asok tree, sacred to the Buddhists as the tree under which their great teacher was born, is found in eastern Bengal and also in southern India. Further east, at the mouth of the Ganges, is the Sunderbans—a region of grassy savannahs, mangrove swamps, and dense evergreen forest.

South of the Plain rises a tableland, the Deccan, some 2000 ft. high, broken by river valleys favourable for the cultivation of crops and the growth of green woods. A large area of this tableland is sheltered from the monsoon by the Western Ghats, and has therefore a small rainfall. This dry zone extends to the low lands of the Carnatic and the plains of south India. The soil of the Deccan is black from the underlying volcanic rocks, known as the Trap. It is a region of grassy plains and flat-topped hills, characterized by clumps of thorny acacias, species of ber (*Lzyphus*), small trees and shrubs, either leafless or withered in hot weather. Forests, where present, are mainly deciduous and composed of bamboos (which see), stunted teak, and other small trees. To the north and east, beyond Nagpur, is a humid region where teak gradually gives place to the sal, a valuable timber tree; and the familiar Deccan crops—millet, pulses, and cotton—are replaced by rice and cane sugar.

The Malabar coast, on the seaward side of the Western Ghats, catches the monsoon and hence benefits from the rain thrown down by the mountains behind. The forests here are very dense and comprise lofty trees, festooned with perennial creepers. Bamboos form a luxuriant undergrowth. Where

the forest is more open, the banks of the streams are covered with groves of spice and betel-nut. At Coorg the evergreen forests are dense and tangled with thorny undergrowth and creepers. Among other valuable timber trees they contain the poon, ebony, the ironwood tree, the sampige, and a species of cedar. These trees are clothed with orchids and mosses and festooned with wild pepper, convolvulus, etc. To the east is a drier zone, where large clumps of bamboos are interspersed with teak, sandal, and other trees peculiar to the deciduous forest. The forests of Assam are to all intents and purposes like those of Malabar.

In the Himalayan region the foothills are covered with giant bamboos, sal, and silk-cotton trees, growing to a height sometimes of 150 ft. Above this zone comes a region of oaks, magnolias, laurels, and birches, covered with mosses and ferns, like any temperate forest. At a height of about 5000 ft., forests of pines, firs, yew, and juniper, with an undergrowth of rhododendrons and dwarf bamboos, set in and extend to 10,000 or 12,000 ft. Above the tree line is a strip of upland grass country, and then come the bare towering peaks of the Himalayas. In the eastern part of the range, exposed to the monsoon, the tropical trees reach higher levels than in the colder, drier climate of the western Himalayas.

In the forested area of India, especially, there are, of course, a host of different kinds of trees, shrubs, small flowering plants, creepers, rushes, grasses, ferns, mosses, and liverworts, to mention only a few, which it is quite impossible to discuss here.

Crops of economic value are extensively grown in India. See AGRICULTURE AND FARMING, Vol. IX, page 5020.

POCHKHANAWALA, SIR SORABJI NUS-SERWANJI (born 1881). The pioneer of Indian national banking. He was born in Bombay of Parsee parents. After completing his education, he served two British managed local banks. In 1911 he was instrumental in founding the Central Bank of India. It was started with a paid-up capital of £75,000, which has now grown to £1,250,000, with a subscribed capital of twice that amount. He has all along during its twenty-six years of existence been its managing director.

Owing to his experience of Indian finance, Sir Sorabji was appointed a member of the U.P. Banking Commission and also of the Government Securities Rehabilitation Committee appointed by the Government of India in 1921. He was chairman of the Ceylon Banking Commission. In 1936 he opened in London a subsidiary to the Central Bank.

PONDICHERRY. See article. Vol. VII.



INDIAN FLOWERS

1. Cassia Fistula. 2. Canna 3. Lagerstroemia Flos-reginea 4. Michelia Champaca 5. Butea Frondosa Koenig
6. Nelumbian Speciosum (Lotus Flower).

PRASAD, BABU RAJENDRA (born 1884). Nationalist political leader. He was born in a village named Jiradei in Bihar, and educated at Calcutta University. He had a growing legal practice when, in 1922, he suspended it and threw himself into the Congress movement and became an organizer of the boycott of foreign cloth. When Mr. Gandhi started his campaign of civil disobedience by breaking the Salt Act, Rajendra Prasad organized a similar campaign in Bihar. In 1932 he was appointed Dictator of the Congress for the whole of India. Twice he was arrested and sentenced to imprisonment. He presided over the sessions of the Indian National Congress held in Bombay in 1934.

Babu Rajendra Prasad devotes much attention to social work.

PREMCHAND, TARABAI MANECKCHAND. The first Indian lady to have the distinction of being elected (1936) as one of the Vice-Presidents of the International Council of Women.

Mrs. Premchand was chairman of the National Council of Women in India from 1930 to 1934, was a representative of India at the International Council of Women's Conference in Paris in 1934, and later Vice-President of the National Council of Women in India.

PUNJAB See article Vol. VII

RADHAKRISHNAN, DR. SIR SARVAPALLI (born 1888). The first holder of the recently founded Spalding Chair in Eastern Religions and Ethics at Oxford University. Born into an orthodox Hindu home in Madras Presidency, his boyhood was spent in Christian missionary institutions. He had a brilliant career at Madras University, and was afterwards appointed Professor of Philosophy at the Madras Presidency College.

In 1921 the King George V Chair in Philosophy in the Calcutta University fell vacant, and Radhakrishnan was selected for the position. In 1926 he represented Calcutta University at the Empire Universities Congress at Cambridge. Whilst in England he was selected to give the Upton Lectures. His lectures have been published under the title of *The Hindu View of Life*.

He later visited America and lectured at several universities.

The impression he had produced in England, strengthened by the publication of his *Indian Philosophy*, was to bring him yet another distinction. When the Chair of Comparative Religion fell vacant at Manchester College at Oxford in 1929, it was offered to him. He was also invited to deliver the Hibbert Lectures. On his return to India he was adopted as Vice-Chancellor by Andhra University.

RAHAMIN, S. FYZEE (born 1880). A noted Indian artist, born in Poona. After receiving a preliminary training in the Bombay Art School, he took a course at the Royal Academy School in England. He has evolved his own method of painting, which is different from both the Bengal and Bombay Schools. He was art adviser to the Maharaja Gaekwar for some years. He has exhibited at the Royal Academy in London from time to time since 1906, and has had several successful private exhibitions. In 1927 he painted two large domes in the Secretariat building in New Delhi. Two of his paintings are in the Tate Gallery.

RAI, LALA LAJPAT (1865-1929). Indian social and political worker. Lajpat Rai was born of humble Hindu parents at Jagaran in the Punjab. After a distinguished university career, he practised as a lawyer. He took active interest in education and social and religious reform. He was instrumental in founding the Dayanand Anglo-Vedic College in Lahore, and organized numerous branches of the Arya Samaj (Vedic Church). He edited two vernacular journals in the interests of religion, social reform, and educational progress.

Lajpat Rai presided over the Indian National Congress at Calcutta in 1920. He founded and endowed the Tilak School of Politics at Lahore for training political workers of nationalist views.

Following an agrarian uprising in the Punjab, Lajpat Rai was deported in 1909.

His publications include a concise historical account of Hindu civilization and *Father India*.

RAJAH. See article, Vol. VII

RAJPUTANA. See article, Vol. VII.

RAMABAI, PANDITA (1858-1922). A pioneer woman social reformer. She was born in a village near Mysore.

Determined to devote her life to the betterment of the conditions of Indian women, Ramabai started on a lecture tour when she was hardly 20, speaking on emancipation of women, evils of child marriage, and such other subjects, supporting her arguments with quotations from the Hindu *Shastras* (scriptures). She then started a society for women called "The Arya Mahila Samaj."

In 1882 she appeared as the spokesman of the *Samaj* (Society) before the English Education Commission, and pleaded for the urgent improvement of the education of Indian women. Her action resulted in the initiation of Lady Dufferin's general medical movement for women in India.

Pandita Ramabai was in 1883 appointed Professor of Sanskrit at the Ladies' College, Cheltenham.

On her return to India a Ramabai Association was formed and the first Home for Widows was started, where they were trained as teachers, housekeepers, nurses, etc. She also organized girls schools and homes for the deformed and mentally afflicted. She also started a Rescue Home.

RAMAN, SIR CHANDRASEKHARA VENKATA. One of the most eminent Indian scientists and the holder of the Nobel Prize for Physics. Raman was born of a Brahmin family in humble circumstances, at Trichinopoly, in south India. As a child he exhibited an aptitude for science, remarkable in one of his age. While yet in his teens in the Madras Presidency College, where he was allowed special privileges, his notes on his investigations of Melde's experiments dealing with acoustics was published in the *Philosophical Magazine* and another original paper on "Optics" in *Nature*.

After a brilliant academic career, Raman was appointed an officer in the Indian Finance Department of the Government of India, and he spent ten years of the most active period of his life in official routine work. While at Calcutta he was able to carry on research in his spare hours in the laboratory of the Indian Association for the Cultivation of Science, and a steady stream of research publications began to appear in the scientific journals, which firmly established his reputation as an original investigator. In 1914 he accepted the Palit Chair of Physics. He threw himself heart and soul into the work of establishing for the Calcutta University a reputation as a centre of research in physics. He was sent as a delegate of the Calcutta University to the Congress of British Universities held in Great Britain. His lecture at the Physical Society of London was received with great enthusiasm. The most significant of his early honours was the Fellowship of the Royal Society of London in 1924. He was later an important delegate at various British and International Congresses for the advancement of physical studies.

By far the most notable contribution of Dr. Raman to the world of science, for which he got the Nobel Prize, is what is known after his own name—the Raman effect. The discovery is that when light falls upon molecules of matter and is scattered by them, a remarkable change occurs, which is most readily perceived by observing the scattered light through a prismatic spectroscope. Raman has also discovered a new and extremely sensitive apparatus by which the feebly magnetic properties of gases and vapours may be accurately measured. He is the Director of the Indian Institute of Science in Bangalore.

RAMANUJAM, SRINIVASA (1887-1920). An Indian mathematical prodigy. Ramanujam was born of poor Brahmin parents at Erode in south India. He had no college education and worked as a clerk. Dr. G. T. Walker, F.R.S., the meteorologist, who had happened to see some of his papers dealing with subtle mathematical problems, discovered in him great originality, and secured for him a special scholarship from Madras University.

When he was doing research in Madras University, he was in correspondence with Prof. G. H. Hardy, of Cambridge, who was also struck by the extraordinary nature of the solutions of numerous mathematical theories that the young Indian had adumbrated, and he himself negotiated with authorities in London and Madras to provide the benefit of a Cambridge education for him, as he needed a touch of up-to-dateness to his mathematical equipment to enable him to contribute his due share to the advancement of mathematical knowledge. Working under the guidance of Cambridge professors, he developed rapidly. The world of science was apprised of the great mathematical researches of Ramanujam, and in 1918 he was elected a Fellow of the Royal Society, the first Indian to obtain that distinction. The same year he was also elected a Fellow of Trinity College, Cambridge. All his results, right or wrong, had been arrived at by a process of mingled argument, intuition, and induction, of which he was entirely unable to give any coherent account. The limitations of his knowledge were as startling as its profundity. The Memorial edition of Ramanujam's works was published in 1928 by the Cambridge University Press.

RAMAYANA. See article, Vol. VII.

RANADE, MAHADEO GOVIND (1842-1901) A Maratha Brahmin, born in Kolhapur. After a brilliant university career, he was appointed Professor of English Literature in Elphinstone College in Bombay. Later he joined the Judicial Department, and became a High Court Judge in 1893.

Ranade was a great social reformer. He was one of the founders of the Prarthana Samaj, a Theistic Church like the Brahmo Samaj, but its theism resting largely on ancient Hindu thought. He had made it his life-work to purify Hinduism of its worst prejudices and customs. He was for many years a member of the Bombay Legislative Council.

RANGIT SINGH. See article, Vol. VII.

RANJITSINGHJEE, JAM SAHEB OF NAWANAGAR (1872-1933). Indian Prince and famous cricketer. He was born in Jamnagar, and was adopted by his uncle, who was then ruling, as his heir. He was not, in fact, his

immediate successor, but eventually he became ruler in 1907.

Ranjitsinghjee, when he became a ruler, pursued the interests of his State with great single-mindedness. Reform in the revenue system, extension of the railways, development of the port, irrigation, the improvement of agriculture, urban and village sanitation, and educational reforms—all these claimed his attention. He brought into being an Advisory Assembly with the object of increasing the association of popular opinion with the administrative machinery.

During the World War he served as honorary Major in the British Army on the Western Front, and was mentioned in dispatches.

The Jam Sahab was the Chancellor of the Chamber of Princes, and did not favour the proposed Federal constitution.

Ranjitsinghjee will be remembered by Englishmen, who affectionately named him "Ranji," as a cricketer and a stylist almost without comparison. He played for Cambridge and Sussex, and in first-class cricket scored 72 centuries.

RATEL. See article, Vol VII.

RAY, SIR PRAFULLA CHANDRA. Veteran Indian scientist and philanthropist Ray was born in Calcutta in 1861. After obtaining his D.Sc. at Edinburgh, he returned to India and was appointed Professor of Chemistry in Calcutta Presidency College. In the College laboratory he did research, and his work was highly spoken of. His *History of Hindu Chemistry* is the standard work on the subject.

He was also the founder of the Bengal Chemical and Pharmaceutical Works, now the biggest chemical industrial concern in India. He is a large benefactor of charitable objects. In spite of his labours in industry, he is Paik Professor in Calcutta University.

READING, 1ST MARQUESS OF. See article, Vol VII.

REDDI, MUTHULAKSMI (born 1886). Prominent Indian woman doctor. She was born in Pudukottah (south India), and studied at the Madras Medical College, completing the M.B., C.M. course with distinction, winning gold medals and Honours certificates. Soon after she married Dr T. Sundara Reddi. With the aid of the Government of India scholarship, she pursued further studies in England, specializing in the diseases of women and children.

On her return to India she was nominated a member of the Madras Legislative Council, and later was elected Deputy-President of the Council. During the period of her term she furthered the cause of women and children. She was instrumental in passing certain important measures of social and

moral reform, and in securing greater facilities for the promotion of girls' education. In 1930, while at the height of her power, she resigned from the Council as a protest against the imprisonment of Mr. Gandhi. Two years later, in London, she gave evidence before the Parliamentary Joint Select Committee on the Indian constitution. She is a prominent member of the All-India Women's Conference and a patron of the All-Asia Women's Conference.

RELIGION. Religion occupies the chief place in the lives of practically all Indian people. By natural disposition they are probably the most religious people in the world: 240,000,000, or 68 per cent of the population, are Hindus. And Hinduism is not an imported religion: it is a religion which has grown out of the very life of the people; they have made it and it has made them. Also, it has been influenced by the natural surroundings of the people who profess it and not by those of another race. Thus Hinduism is intrinsic to the Indians; it permeates their lives and influences all they do. And when they are swayed away from it, as many of them are at the present time by the materialism of the West, they are unhappy and uncomfortable, and in the end swing back to what is of the very fibre of their nature.

Hinduism, like other religions, is difficult to define exactly. Its essential spirit is comprehensive and sympathetic. It absorbs everything that enters into it and seeks to raise it to a higher level. It is broken up into almost innumerable sects, yet has a quite recognizable unity. A Hindu is very distinctly different from a Moslem, a Christian, or even a Buddhist. The chief original sacred scriptures are the Vedas, which record the spiritual experiences of souls in close contact with Nature. These were written in very ancient times, and Hinduism with its absorptive character has developed much since they were written. The Upanishads embody the experiences of the sages. The Bhagavad Gita gives the chief means by which men can reach the truly religious life. There are Protestant movements, like Jainism and Buddhism, springing from within Hinduism; and there has been the stimulus of Islam and Christianity from without. And under both the inward urge and the outward stimulus, Hinduism, while retaining its conservatism, has shown signs of steady development.

The conception of God in Hinduism has naturally changed with the general development of the religion. He is viewed as the Supreme Knower (Brahma), the Great Lord (Vishnu), and the Perfect Will (Shiva), these being three sides of one complex personality.

To the Hindu, God is not only personal, but supra-personal. He is the supreme cause and ground and end of the world. A visitor to India finds the Hindu masses worshipping a variety of gods and goddesses; yet even the humblest villager does have at the back of his mind a conception of one supreme Deity to Whom he appeals in times of distress. The gods of the ancient scriptures are all subordinated to the one supreme Reality. In one sense there is pantheism and yet there is at the same time a definite monotheism. It must also be said that the Hindus recognize that no conception of God can be



INDIAN FAKIRS

Their outlandish clothes and grotesquely painted skins give them an almost inhuman appearance, which is calculated to draw alms from simple people

Photo - Keystone

full and final, but that men only see different aspects of the one central Reality.

Hinduism prides itself upon having no definite creed or fixed form of worship. It is tolerant of other religions and makes no attempt at proselytizing. But it has an inner cohesion; and at the present day there is a distinct effort to make the spirit of Hinduism appreciated outside India.

The different ways to God are known as Jnana (Wisdom), Bhakti (Devotion), and Karma (Service). But these are not regarded as completely separate from one another; in its highest flight, Bhakti coincides with Jnana, and both issue in right Karma or virtuous living. This doctrine of Karma has been misunderstood as being akin to fatalism. But its real meaning is this: that the course of nature is determined by fixed laws; that not only the outward physical world, but also the mental, moral, and spiritual world, are ruled by law. These are the laws of God, and cannot be evaded. The past is fixed, no one can escape the consequences

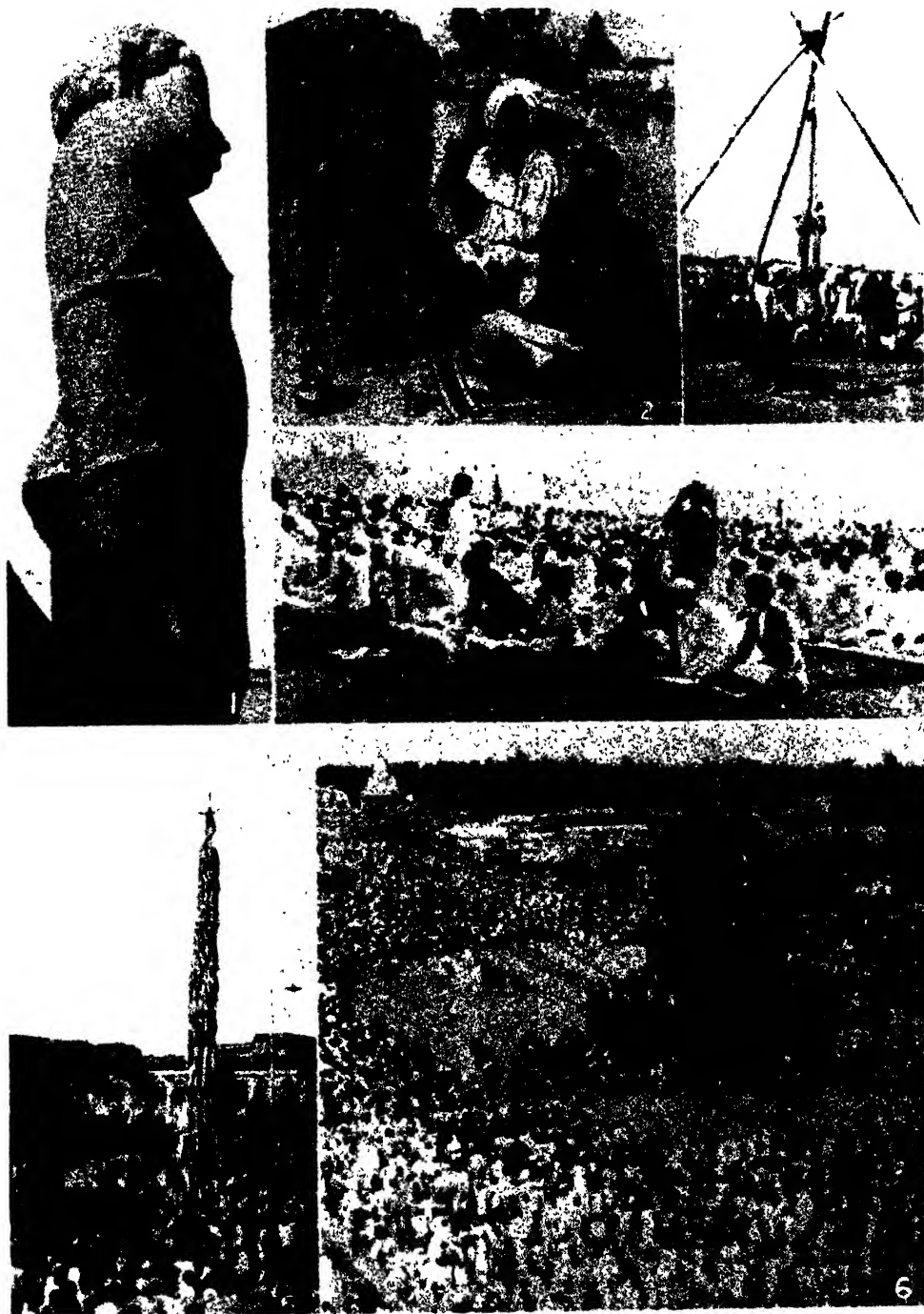
of evil in the past, and all may expect to enjoy the fruits of good. But though the present is determined by the past, choice is left open for the future, man, within the limits of his nature, is free to choose. There is no mere unfolding of a prearranged plan, but in their scope for genuine rational freedom men are fellow-workers with God.

Hinduism enjoins a strict code of practice and insists on a moral life. Freedom can be obtained only through bonds of discipline and the surrender of mere inclinations. The ends of life, according to this Hindu code, are righteousness (Dharma), wealth, culture, and spiritual freedom. But the pursuit of wealth and happiness, though a legitimate aspiration, should be by ways of righteousness (Dharma), if it is to lead ultimately to spiritual freedom (Moksha).

Yoga is a discipline and method of attaining the highest spiritual experience. It enforces a firm control of the body by the mind, and is exercised by some of its masters with extreme severity till every outward influence is excluded and the whole mind is concentrated upon the inner spiritual life. It culminates in that experience known in Hinduism as Samadhi, which is akin to the mystical experience of other religions.

The doctrine of reincarnation is another characteristic of Hinduism. Men have had former lives just as they will have future lives. If a man is evil in this life, he may be born again in a lower grade of animal life. Thus a soul is born again and again until through the power of Dharma, or righteous living, it attains its aim of spiritual freedom, of Moksha.

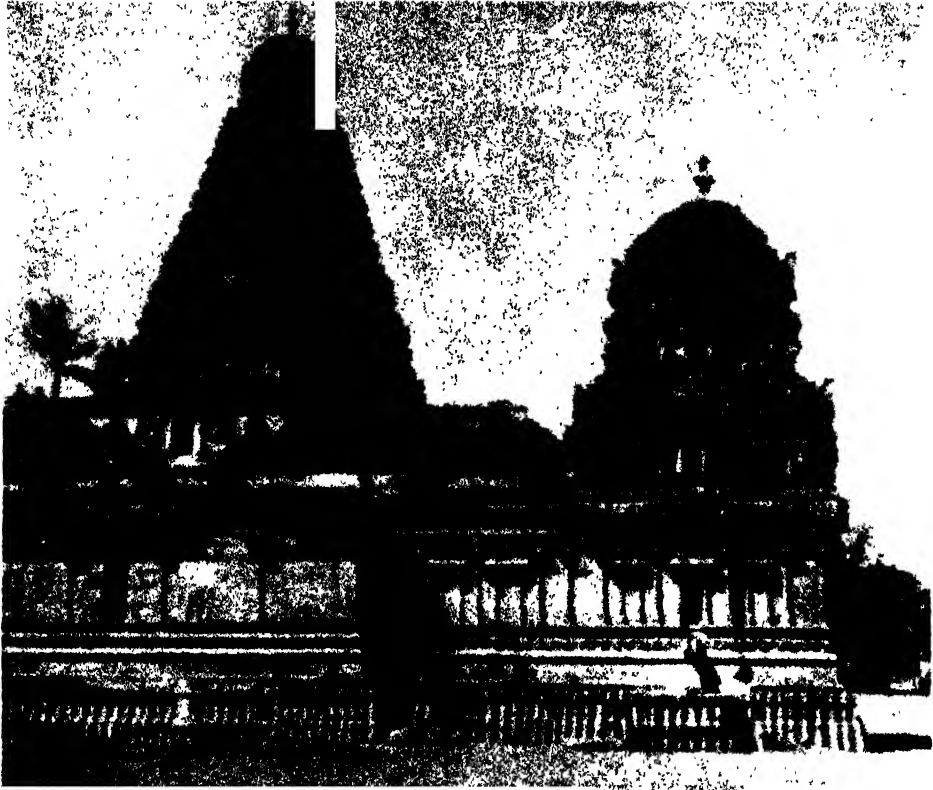
But perhaps the feature by which Hinduism is best known to the outside world is the system of caste. Hindu society is stratified into high castes and low castes, just as in many European countries society is stratified into the aristocratic classes, the middle classes, and the lower classes. The difference is that in India the stratification has in the course of thousands of years become fixed and rigid. Inter-marriage between members of the different castes is severely discountenanced and usually definitely forbidden. Also a man of high caste cannot take food from a member of the lower castes, and those outside the castes are despised and rejected. Yet, in theory, the caste system has much to recommend it. Society is looked upon as a whole, and the different parts are regarded as serving the whole, and more particularly the highest part of it. In spite of the degradation of the system, it has to its credit the preservation of the spiritual culture of India long after Greek culture had disappeared from Greece and Roman culture from Rome. The ancient Hindus strove to



RELIGION

1. Sri Gomataswara at Sravanabelagola. A Jain statue which is sixty-eight feet high. 2. Sadhu and his server at prayer. 3. Sadhu, hanging upside down over a fire. This is one of their forms of asceticism. 4. Mohammedans at prayer in Madras. 5. Jain festival in Calcutta. This fifty feet pole is the main feature in the procession. The flags are embroidered with swastikas. 6. The Jagannath car in the procession at Puri.

Photos: Keystone; Topical; M. Milward; Indian State Railways



SHIVA TEMPLE TOWER, TANJORE.

The base of the Great Temple is obscured by a smaller temple in the foreground. Its famous tower is an original part of the temple which dates from the eleventh century.

Photo K de H Codrington

preserve Hindu society from racial amalgamation. Each caste had its own special function, code, and tradition, and observed certain usages regarding food and marriage. The Brahmin—the priestly caste—was the highest, and its function was to preserve and develop spiritual culture; the Rajputs were the rulers and fighters; the Vaisyas were the economic group; and the Sudras were the workers. These have since been divided up into innumerable sub-castes; but the four main castes represent roughly men of thought, men of action, men of feeling, and the workers in the fields. And a remarkable circumstance is that a member of any one of these castes may rise by the quality of his spirituality to be above all castes, supreme over everyone.

Hindus are very fond of making pilgrimages—not, indeed, to one central sacred place, such as Mecca is to the Moslems, but to a number of shrines all over India and

especially to Benares, the sacred city on the banks of the Ganges; to Hardwar, where this holy river issues from the Himalayas, and to its source in the Himalayan heights.

Hinduism shows decided signs of revival at the present day. Towards the close of the last century the Arya Samaj Movement sought to lead Hindus back to the original purity of their religion, as disclosed in the Vedas. At the same time, the Brahmo Samaj sought to combine the best elements of Christianity, Islam, and Hinduism in one eclectic religion. And apart from these two, Rahmakrishna, while steeping himself in the spirit of Christianity and Islam, declared a revived form of Hinduism which is being widely welcomed at the present day and being promulgated by the Ramakrishna Mission. Of living Indians, such Hindus as Rabindranath Tagore, Arabinodo Ghose, Radhakrishnan, and Gandhi have made a profound impression upon Western peoples.



INTERIOR OF DILWARA TEMPLE, MOUNT ABU

The carved pillars are of solid stone.

Photo: Indian Railways Bureau

Islam. About 77,000,000 inhabitants of India, or 22 per cent of the population, profess the religion which is usually spoken of as Mohammedanism, but which its adherents prefer to call Islam, just as they prefer to call themselves Moslems. It is the religion initiated by the Prophet Mohammed in the seventh century, and he himself preferred that his followers should not be known by his name, but as submitters to the Will of God; he would have nothing between them and God. The creed of the Moslems is very simple. It is belief in one God who is the God of all nations, the cherisher and sustainer of all humanity. All live on the same floor of earth under the same sky and lit by the same sun; all have equally the spiritual light. The Koran is the sacred book of the Moslems, and in it is written: "We believe in Allah and in that which has been revealed to Abraham, Ishmael, Isaac, and Jacob and his tribes, and in that which was given to Moses and Jesus, and in that which was given to prophets from their Lord. We do not make any distinction between any of them, and to Him we submit ourselves." Every Moslem declares "I bear witness that there is no God but Allah, who alone is to be worshipped and who has no associates, and I also bear witness that Mohammed (Peace be upon him) is His apostle and servant."

Prayer is a very prominent feature in the life of Moslems. They are enjoined to pray five times a day, and it is a very usual sight in India and in Moslem countries to see Moslems gathered together in a line, or lines, with a leader of prayer in front, repeating their prayers in unison and bowing three times to the ground until their foreheads touch the earth. According to the Koran, prayer restores the self-possession of the self by bringing it into closer touch with the ultimate source of life. It is an escape from the monotony of mechanical action to the freedom of man's full being.

During the repetition of these prayers the worshippers, in whatever part of the world, all face in the direction of Mecca; and this fact alone, together with the fact that they are praying not in isolation but in community, greatly enhances the sense of fellowship amongst all Moslems.

Another characteristic of Islam is the importance attached to pilgrimage to the sacred city of Mecca. From the most distant parts of the world, Moslems find their way over deserts and mountains and seas to the birthplace of their religion. This act confers upon them special sanctity, and that again does much to foster the sense of community amongst all Moslems.

Yet another feature of Islam is the feeling

of equality which it engenders. With them, especially, the saying that "in the sight of God all men are equal" is applied. At their meetings for prayer all join in on a footing of equality, and no special places are reserved for any men, however great. Strictly speaking, among Moslems there should be no hereditary rulership or priesthood.

Christianity. Of the Christians in India, the most interesting are perhaps the Syro-Malankarans of southern India, who believe themselves to be the oldest sect of Christians in the world. The tradition is that the disciple Saint Thomas landed on the coast of Madras. In any case, one of the bishops of this very early Church was at the Council of Nicaea, A.D. 325. Numbers of these Indian Christians still exist in the Indian State of Travancore, though quite recently one of their bishops and a considerable number of the people joined the Roman Catholic Church.

ROBERTS, 1ST LORD. See article, Vol. VII

ROSS, SIR RONALD. See article, Vol. VII

ROY, RAJA RAM MOHAN (1772-1833) Commonly known as the "father of modern India," Ram Mohan was born at Radhanagar in Bengal. After his first lessons in Bengali (mother tongue) and Persian (Court language) at home, he was sent at the age of 9 to Patna, then the centre of Islamic culture in India, for higher studies in Arabic. At the age of 12 he was sent to Benares (the seat of Hindu orthodoxy) for the study of Sanskrit. There he mastered the fundamental principles of Hinduism. Later he travelled to Tibet, and from the Lamas learnt of the Buddhist faith. At the age of 22 he commenced the study of English.

His study and research convinced him that popular Hinduism was but a modern growth. The teachings of the Hindu scriptures had almost been forgotten and the religion of the ancient India had degenerated into all forms of idolatry.

In 1815 he launched his onslaught on idolatry and *sati*. Equally strong and convincing was his stand against polygamy and child marriage.

In 1828, Ram Mohan Roy established the first Brahmo Samaj in Calcutta, the chief principle of this Church was that in it the Supreme Being alone was to be worshipped.

Ram Mohan was the first important Ambassador from India to England, going as the representative of the Moghul Emperor of Delhi.

RUPEE. See article, Vol. VII

SAHA, PROFESSOR MEGHNAD (born 1893) Born of poor Hindu parents in Dacca, Saha had a brilliant career at the Calcutta University and became a Professor of Physics

in Allahabad University. He is best known in scientific circles for his great work in Astro-Physics. It was he who in 1920 first attempted to develop a consistent theory of the spectral sequence of the stars from the point of view of atomic theory. He was elected a Fellow of the Royal Society of London in 1927.

Professor Saha presided over the section of Physics in the Indian Science Congress held at Bombay in 1926, and was General President of the Science Congress again at Bombay in 1934.

Professor Saha has founded a popular journal entitled *Science and Culture* for popularizing scientific knowledge in India.

SAHNI, PROFESSOR BIRBAL (born 1891). Born of cultured Hindu parents in the Punjab, he was educated at Lahore, Cambridge, and London.

Dr. Sahni is now Professor and Head of the Department of Botany in the University of Lucknow, and also Dean of the Faculty of Science. He has published original papers over a wide range of subjects in botany, but his interest has lain chiefly in the study of extinct plants. He was elected a F.R.S. in May, 1936.

Professor Sahni was one of the Vice-Presidents of the Palaeo-botany Section of the Fifth International Botanical Congress, Cambridge, 1930, and again at the Sixth Congress, Amsterdam, 1935.

SAPRU, THE RT. HON. SIR TEJ BAHADUR (born 1875). Jurist, statesman and Privy Councillor. Born of a Hindu family in Agra. After a brilliant career at Allahabad University, he was enrolled as an advocate of the High Court of Judicature at Allahabad.

Sir Tej also took part in politics, and was elected to the Provincial Legislative Council. Later he became a member of the Imperial Legislative Council. He served on Lord Southborough's Franchise Committee when the Montagu-Chelmsford reforms were under consideration, and supported the reforms before the Parliamentary Joint Select Committee.

He was appointed Law Member of the Viceroy's Cabinet in 1920. The solution of the Indian political problem, he believed, must be found by combining expedition in constitutional advance with caution and safety. Late in 1923 he was a representative of the Government of India at the Imperial Conference in London.

Sir Tej Bahadur was president of the Indian Liberal Federation, and was a delegate to all the three sessions of the Round Table Conference. In 1935 he was appointed chairman of the Unemployment Inquiry Committee appointed by the United Provinces Government.

SARKAR, SIR JODU NATH (born 1870). Indian historian. He was born in Rajshahi district in Bengal. He studied at Calcutta University, and was later appointed Professor of History at Patna College. He was also for some time Professor of Indian History in the Hindu University at Benares. He was later Vice-Chancellor of Calcutta University for a period of three years. He has written a number of books, of which the more important are *Mughal Administration*, *India of Aurangzeb*, *Economics of British India*, and *Fall of the Mughal Empire*.

SASTRI, THE RT. HON. V. S. SRINIVASA (born 1869). Indian statesman; was born in a village, near Kumbhakonam, in south India, of poor Brahmin parents. At the age of 38 he joined the Servants of India Society, becoming President a few years later.

When nearly 50, Mr. Sastri entered the Imperial Legislative Council. When the Montagu-Chelmsford reforms were under consideration, he served on the Southborough Committee. He was also a member of the Moderate deputation which gave discriminating support to the reforms before the Joint Committee of both Houses of Parliament in London. He was elected a member of the Council of State when the reforms became operative.

Mr. Sastri represented India at the Imperial Conference in London and was made a Privy Councillor. He represented India in the League of Nations Assembly at Geneva and the Disarmament Conference in Washington. He has visited officially practically the whole of the British Empire. He was appointed as the first Agent-General to the Government of India in South Africa in 1927. In 1937 he headed a deputation to Malaya to examine the conditions of Indian labour.

SATPURA RANGE. A mountain system which stretches from the plateau of Amarkantak, at the head of what is sometimes known as the Maikal Range, to within 50 miles of the western coast. Here it is divided from the northern point of the Western Ghats by the Tapi river plain. This river also splits the Satpura Range from its source until its junction with the Purna River when the southern ridge ceases. For the most part the range is not rugged but is rather an elevated plateau lying between 1500 and 2500 ft., though in places it rises over 3500 ft.

SEAL, DR. SIR BRAJENDRA NATH (born 1864). Indian scholar and thinker. He was born in Calcutta of Hindu parents.

Sir Brajendra was George V Professor of Mental and Moral Science in Calcutta University for six years, and then he was appointed the first Vice-Chancellor of Mysore

University, and this position he filled for ten years till 1930. He was Chairman of the Committee on Mysore Constitutional Reforms.

His books include, among others, *Comparative Studies in Vaishnavism and Christianity*, *Race Origins*, and *Positive Sciences of Ancient Hindus*.

SEN, BRAHMANANDA KISHUB CHUNDER (1838-1884) Religious teacher and reformer. He wanted to reform particularly the Hindu community by leading the way towards a civilization neither Western nor Eastern, but larger than both.

He was born in Calcutta, of an ancient and illustrious Hindu family that claimed descent from the Sen Kings of Bengal. Despising the worship of idols, he joined the Brahmo Samaj, which enjoyed the worship of Brahma, the Creator. He was soon installed as the Minister of the Samaj, with the name of *Brahmananda* (Rejoicer in God).

He carried out a great preaching tour and was received everywhere with great enthusiasm.

In the spring of 1870, Keshub Sen visited England. The object of the visit was to carry the message of the new faith to a wider public. He met with cordial welcome.

SEPOY. See article, Vol. VII

SHAFI, SIR MOHAMMED (1860-1932) The acknowledged leader of the Moslem community in northern India. Shafi was born in Lahore. After being called to the Bar from the Middle Temple, he practised in the Punjab. In 1913 he was unanimously elected President of the All-India Moslem League.



SIR MOHAMMED SHAFI
Photo: Central

In 1909 he entered the Punjab Legislative Council and the Imperial Legislative Council, and remained on both for ten years until he became the first Minister for Education under the Montagu-Chelmsford Reforms. Three years later he became Law Member, and at the time of his death held the portfolio of Lands and Health in the Viceroy's Cabinet.

During his tenure of office as Education Member the Mohammedan Anglo Oriental College at Aligarh was raised to the status of a University. He also supported the foundation of residential universities in preference to merely examining universities,

and whilst he was Education Member, Lucknow, Agra, Delhi, Patna, and other residential universities were brought into being.

SHAH JEHAN, EMPEROR. See article, Vol. VII

SHAN-KAR, UDAY (born 1900) Eminent Indian artist, who has played an important part in bringing about the renaissance of the traditional Hindu dance. He was born at Udaipur and educated in Benares. He also studied at the Academy of Art in London. His talent for dancing was discovered by Madame Pavlova, who took him as her partner for the Krishna-Radha ballet. After a few years, Shan-kar formed his own company with the help of his dancing partner, Mlle. Simkie. All the dances are his own creation.

SIKHS. See article, Vol. VII

SIKKIM. See article, Vol. VII

SIND. See article, Vol. VII

SINHA OF RAIPUR, LORD (1864-1928) The first Indian to be a Member of the Viceroy's Executive Council, the first Indian to



Situated in the Punjab on a southern spur of the Himalayas, it is over 6000 feet above sea level, and has a delightful climate. It is the summer residence of the Viceroy and staff of the Indian Government.

Photo: Indian State Railways

be King's Counsel, the first Indian statesman to be a Privy Councillor, to be a Member of the British Government, and the first Indian peer.

Lord Sinha was born at Raipur, a village in Bengal; became a Member of Lincoln's

Inn, but never took his final examination, the Benchers excusing him by dispensation. He practised at the Calcutta High Court, and in 1903 the Government of India appointed him as Standing Counsel and, three years later, Advocate-General. In 1909 he was selected to be the first Indian Law Member of the Government of India. During his tenure of office the Morley-Minto reforms were introduced.

In 1917 Sinha was selected to represent the Government of India at the Imperial War Cabinet in London. He also represented India at the Peace Conference. His ability was everywhere recognized, and he was detained as Under-Secretary of State with a peerage, to take a responsible part in working out India's new constitution. When the new constitution for India had been hammered into shape, he returned to India as Governor of Bihar and Orissa. Later he became a member of the Judicial Committee of the Privy Council in London.

In 1915 he was elected President of the Indian National Congress. He was a determined Liberal and, though eager for constitutional progress, was insistent that it could be secured only by constitutional methods.

SOCIAL AND POLITICAL ORGANIZATION. The political organization of British India is determined by Acts of Parliament, and it has been remodelled more than once within the last 100 years. Its social organization on the other hand, of which the leading features are the village system and the caste system, has its roots deep down in a very distant past, and is the product of the climate and of the ideology of the peoples of India.

Recent explorations in the Indus Valley have revealed the extreme antiquity of Indian civilization and also its originally extremely pacific character. The Aryan invasions obliterated that character, but only temporarily. Subsequently the supremacy of the military caste gave place to Brahmin dominance, and the most conspicuous features of the ancient Indian cities are their great temples. The long series of Moslem invasions again made India the scene of devastating wars and fostered a warlike spirit among "the fighting castes." But, in the main, the spirit of the people remained as pacific as ever, and it was the longing of the Hindu population for settled conditions of law and order which enabled the East India Company to extend its dominion so easily and rapidly over the most thickly inhabited areas.

For the most part, the Indian climate makes outdoor manual labour distasteful, and there is a general tendency to leave

the work of tillage to those who cannot avoid it.

The climatic conditions of these Indian plains also made possible the early development of Indian civilization. India is naturally the home of deep and subtle philosophic thought. But the peculiarly wide gap between the thinking and labouring classes stood in the way of the further development of what we call "useful knowledge" when once a certain level was reached.

The Village System. Village life is the predominant feature of Indian economics. Of the rural population, numbering nearly 314,000,000, the great majority are occupied and supported by agriculture, employment in pasture and agriculture being calculated



REST HOUSE IN THE TERRACE GARDENS,
KRISHNAKAVASAGARA
Photo: Mysore State

to include about 70 per cent of the total occupied population, urban and rural.

Although a great export trade in wheat grew up after the opening of the Suez Canal in 1869, and certain districts specialize in growing grain and commercial crops, particularly cotton and jute, for export abroad or to Indian manufacturing cities, Indian agriculture caters predominantly for the needs of the villages where the crops are grown. Village self-sufficiency is made possible to a high degree by the inclusion in the village communities of a great variety of special workers, such as barbers, washermen, potters, carpenters, blacksmiths, goldsmiths, priests, practitioners of indigenous systems of medicine, and teachers in the elementary vernacular schools. But the villagers are under the necessity of selling annually part of their produce to pay the Government's *kist* (land revenue), or the much heavier rents exacted by private landlords, and the still larger sums due to moneylenders, as interest. Loans are seldom paid off, except

by raising a new and heavier loan. The surplus available for the purchase of goods produced outside the village is extremely small. Village headmen, who serve as petty magistrates in village cases and as general conciliators, and village accountants, who register births, deaths, and causes of deaths (very imperfectly¹), keep the records of holdings of land, generally with sufficient accuracy; and fill in, very inaccurately, quinquennial returns of agricultural statistics, keep the villages in touch with the governmental administration. There may also be a village watchman for police work.

The relatively few market towns scattered over the face of the country, where the surplus produce of the villages is marketed, and bought by merchants for sale elsewhere, which also distribute such goods as the villagers can and will buy, are used as sites for local government offices, police stations, and Anglo-vernacular schools.

The ancient cities of India generally gained their importance through being chosen by Hindu or Mohammedan potentates as capitals, or through possessing sacred temples in high repute and being places of pilgrimage. In their crowded streets and bazaars are to be found the highly skilled artisans who made luxury articles for the ladies of the Indian Courts and their lords, images of the gods and goddesses, and who still make such goods of that character as can be sold now that the Mogul emperors and their viceroys have gone.

The village system as here described does not extend to the numerous hill tribes, and there are parts of the settled districts where the agricultural workers are scattered, and live in tiny hamlets or separate dwelling-houses.

The Caste System. From the point of view of political and social organization, caste may be described as a device for enabling communities of different traditions and culture to live side by side in mutual tolera-

tion and peace; and also as a system of providing for a certain degree of division of labour. More precisely, a caste may be defined as an endogamous group, allowing marriages only within the caste, the members of which follow the hereditary occupation or occupations of the caste, and are ruled in their conduct by a special caste ethical code. So far as Hindus are concerned, the general rules of conduct universally recognized are (1) Honour Brahmins, (2) never deny alms to a beggar if you can give him anything at all, and (3) obey

the rules of your caste. Moslems and Christians, of course, have no castes; they are termed in India "people of the Book," since their ethical codes are prescribed for them by the Koran and the Bible respectively.

The general rule of adherence to the caste occupation allows of two important classes of exceptions. Where changing econo-

mical conditions prevent a man from getting a living by his hereditary occupation, he may, if he finds an opening, take up agricultural work, and all castes and classes may avail themselves of new openings, such as employment by the British Government, in European households, in factories, and on railways. These important exceptions have made possible the growth of modern capitalist industry in India without any sharp conflict with the Indian social organization. The manual workers in the industrial towns are recruited from the superabundant population of the villages; they may be caste Hindus, outcasts, or Mohammedans; and the supervising and clerical staffs of governmental institutions and big businesses are drawn from the higher castes.

The caste system has grown up in such intimate relationship with Hindu religion, philosophy, and traditional ethics, that it offers a stubborn resistance to change.

Political Organization: Its Basis. After the battle of Plassey, in 1757, the East India Company, which had existed for 150 years as a trading concern, began to expand as a territorial power also, and in the course of the next hundred



PARLIAMENT OF INDIA IN SESSION

Photo Keston

¹ Official statistics of Indian birth and death rates must only be accepted with a large allowance for probable understatement.

years superseded the Mogul emperors. The lack of natural frontiers to subdivide the great Indo-Gangetic plain makes it the natural site for a great empire, but the rule over so vast an area could only be carried on by entrusting great powers and responsibilities to local viceroys. As the East India Company extended its dominions, it made use, both from choice and necessity, of the existing system of political organization.

When in 1858 the duties of the Company were transferred to the Crown, a much higher degree of administrative centralization became possible, because of railways and the telegraph. Nevertheless the original basis still remains; the burden of carrying



NAUDI (SWAS BULL)

It is at Haumnkonda Temple in Hyderabad State

Photo M. Milneard

on the day-to-day work of government still rests on the shoulders of the District Officers chosen from the ranks of the Indian Civil Service.

In the Madras Presidency the Districts are large, with populations averaging 2,000,000; in the rest of India they are smaller. The officer in charge of a District is termed the "Collector," his first duty in the Company's days having been to transmit the local revenue to the Presidency headquarters, to maintain the Company's forces, and to pay dividends to its shareholders. In Madras the Collector is responsible directly to the Governor-in-Council; in the rest of India several adjoining districts are grouped together, and their respective Collectors are subject to the control of a Commissioner, who serves as a link between them and the provincial headquarters.

The districts are subdivided into *taluks*, under subordinate officials recruited in India, to whom the village headmen and accountants are responsible.

Centralization. The process of centralization, which was the chief feature of Indian

internal political history up to the World War, was begun under the Company, when the older Presidencies of Madras and Bombay were made subject to the bigger Presidency of Bengal, and the Governor of Bengal became also the Governor-General of India. With the transfer of the powers of the Company to the Crown, the Governor-General became subject to a Cabinet Minister, the Secretary of State for India, who might or might not have some knowledge of Indian affairs, but who was chosen by the Prime Minister from among his own party. He, in his turn, is responsible to the Cabinet as a whole, and to Parliament, which voices the opinions and expresses the will of the British electorate.

Meanwhile, the process of centralizing the administration within India, and of anglicizing its character, went on steadily. At the same time, the initiative of the District Officer and the scope allowed him for the exercise of his individual judgment was being narrowed by the increasing number of the instructions sent to him by the provincial secretariat, and its increasing demands for detailed reports.

Neither of these changes pleased the mass of the population, which prefers a judge who sits in open court, hears the litigants plead in their own persons, uses all his local knowledge in arriving at his opinion, and then pronounces a final judgment, and an executive officer who can be approached directly by petitioners of all classes and who may, and will, give a definite answer to the petition presented. This arrangement is still possible in Indian States.

The subjection of provincial governments to that of the Governor-General also became more effective through the necessary expansion of governmental activities and the corresponding increase of demands on the revenue. The provinces were allotted such revenues as the central government thought fit, some getting more and some less generous terms, and their expenditures regulated even in petty details. The provincial legislatures could pass laws only with the prior assent of the Governor-General; while the central legislature could, with the assent of the Secretary of State, make laws either for the whole of India or for any particular province or provinces. Lastly, increasing inquisitiveness on the part of Members of the House of Commons impelled Secretaries of State to watch Indian affairs more closely and to intervene more frequently.

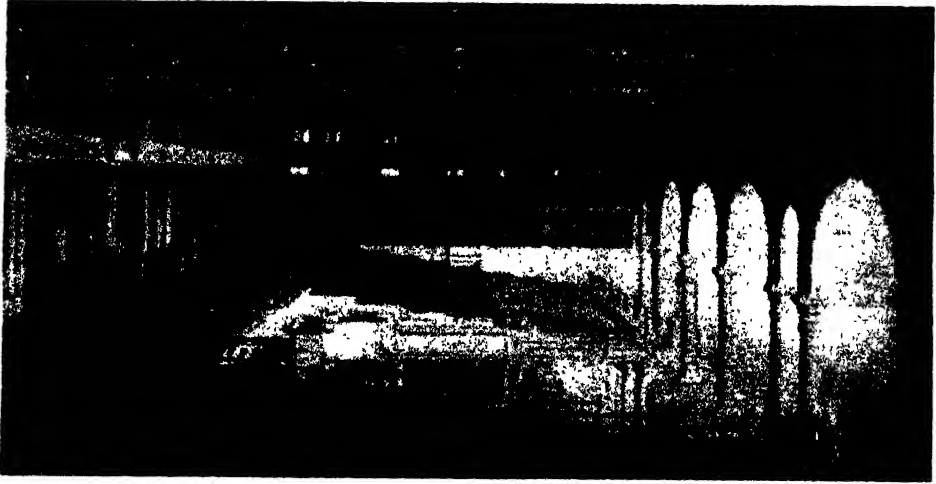
The conflict of opinion between the rulers and the ruled with regard to the principles of good government acted as a stimulus to the growth of Indian Nationalism; but a far more important grievance arose from the



INDIAN SCENES

1. The Minar at Ahmadabad. 2. Tomb of Kuli Kutb Shahi, founder of Hyderabad. It is at Golkonda.
3. Gopuram of the Great Temple at Madura. 4. The Bathing Ghats at Benares, a centre of Hindu Worship.

Photos: Indian State Railways, M. Milward



THRONE ROOM AT PALACE, MYSORE
Photo Mysore State

growth of rural indebtedness, which arose partly from the increase of security and the rise in land values, which gave poor peasants more power to borrow, and partly from the greater ease and certainty with which rapacious usurers could enforce their claims. Many efforts were made by the Government of India to cope with this evil, of which the most effective so far has been the creation of a system of co-operative credit banking, on lines following the methods developed in Germany.

Secretaries of State, on their side, also sought remedies for Indian discontent in the centring and gradual extension to India of the British institution of representative government.

The Montagu-Chelmsford Reforms. The first important step in this direction was the passing of what are called the Morley-Minto Reforms of 1909, instituted by Lord Morley, who acted to some extent on the advice of Mr. G. K. Gokhale. These created provincial legislative councils, with members partly elected on a very limited franchise, and partly nominated. Their functions were merely advisory, but they proved very useful as a means of enabling Indian criticisms of the administration and suggestions for amendment to get an effective hearing, and of enabling the executive to explain its reasons for actions which were challenged.

Much more important changes were effected by the reforms resulting from Mr. E. S. Montagu's personal tour of investigation in 1917-18, which were enacted in 1919, and came into effect at the end of 1920. This enlarged the provincial councils increased the proportion of the elected mem-

bers, and the numbers of the electorate. The franchise was based mainly on property qualifications, with special representation for big landholders, employers' associations, and universities; and the distribution of the franchise was based on communal principles, there being separate electorates of Moham-medans, Sikhs, Europeans, Anglo-Indians (i.e. Eurasians), and Indian Christians. In 1930, 719 out of the total number of 935 members were elected, the other 216 members being either official representatives or nominated non-officials. It was recognized that no member of the depressed classes, whose numbers were estimated at more than 43,000,000, had any chance of election, but they were given a considerable share of the nominations.

An important measure of decentralization was one of the objects accomplished by the reforms. Certain revenues raised locally—including land revenue, excise, stamps, irrigation, and forests—were allotted to the provinces, the more important revenues, which were derived from income tax and customs being reserved for the expenses of the central government.

On the expenditure side a division was made between transferred and reserved governmental services. The former, which included education, health, industry, agriculture, and civil works, were provided for by budgets which were submitted for approval to the legislative councils, which could refuse or reduce the amount asked for by the Governor-in-Council, but could not increase it, and the departments dealing with these services were put under Ministers selected by the Governor from the elected members of the provincial

councils. The provision for other governmental expenditure was reported to the councils, but could not be voted on.

Hence some small scope was given to the practical application of the principle of representative government. It did not amount to very much, as only about 20 per cent of the revenue raised was allotted to the transferred subjects.

At the same time, a concession, not originally intended, was made to the Indian demand for "responsibility at the centre," where two partly elected and partly nominated Chambers were created, termed the Legislative Assembly and the Council of State. These constitute a recognized channel for the expression of Indian opinion and criticism, but they have no power to affect the policy of the executive directly.

Whatever conciliating effect this measure might have had was nullified by the very unfavourable conditions under which it came into effect.

The "Rowlatt Acts," which were for the suppression of political crime, and had been enacted shortly before, roused intense hostility all over India, and led to the outbreak of a quasi-rebellion in the Punjab, which was suppressed quickly, but at the cost of excessive bloodshed, which again aroused fresh resentment, while the harsh terms imposed on Turkey by the Treaty of Sèvres stirred up the indignation of Indian Moslems, and led to a savage rebellion of the Moplahs of Malabar. On the economic side there were great failures of crops, termed "famines" in 1918 and 1920; some 10,000,000 lives were lost through the post-war influenza epidemic; and in 1921 the post-war depres-

sion of trade, following a short and unhealthy boom, swept over India. These causes combined created a "revolutionary situation," and no one can guess what disasters might have followed in the early months of 1922, if Mr. Gandhi had not ordered a cessation of hostilities against the British Raj in February.

A succession of good monsoons and good harvests then eased the strain, and Indian capitalists were conciliated by the imposition of heavy import taxes on British and foreign cotton goods, iron, and steel. Then in 1929 and 1930 world prices of agricultural products began to fall again, and the peasantry for the first time began to play a part in Indian politics by forming *kisan* (peasant) organizations. This movement induced landed magnates and moneylenders to rally to the support of the Government.

The Montagu reforms had two interesting indirect effects. The Act of 1919 did not give votes to women, but allowed the legislative councils to extend the franchise to them on the same terms as men by the passing of resolutions by bare majorities. The Madras Council took this measure immediately, Bombay followed soon afterwards, and then all the other provincial councils and also the Indian Legislative Assembly followed suit.

A very few women have been elected to the councils and have done very useful work. Educated women all over India are making earnest and much needed efforts to reduce the cruel disabilities imposed on Indian womanhood.

The other important indirect effect was that when the depressed classes began to



AERIAL VIEW OF NEW DELHI

In the background is the Viceregal Palace; left centre, the Secretariats; and right, the Council Chamber.

Photo Keystone

count in political affairs, the various parties began to court their support. Within the last few years, under the leadership of Dr. Ambedkar, a member of an untouchable caste, the depressed classes have held All-India Conferences and have resolved that they will cease to adhere to any religion that will not allow them equal religious rights with other adherents. See RELIGION, Vol. IX, page 5117.

The Act of 1919 was to have lasted for ten years only. After six years of inquiry and negotiation, a new Government of India Act was passed in 1935, which contains 321 sections and 10 schedules, the longest Act of Parliament on record.

Its most important feature is that it gives India a federal constitution, bringing in the Indian States into partnership with the provinces, and giving them a share of representation, besides guaranteeing them their old rights and privileges in their own dominions. If they all adhere, the Indian States will be allowed 104 out of 260 seats in the Federal Council of State, and 125 out of 375 seats in the Federal Assembly. The right is reserved to the Governor-General and to the provincial governors to override the representative bodies whenever they think it necessary for the good government of India or their respective provinces; they can veto Bills, or enact laws on their own authority.

The process of putting the Act of 1935 into force began with the elections to the provincial legislatures in February, 1937. To these the Act had given wider powers, and an increased proportion of elected members. The total electorate also had been greatly enlarged, but the effect of this change in the democratic direction had been somewhat neutralized by the splitting of the legislatures of six out of the eleven provinces into two houses: upper houses termed "Councils," based on election by a restricted electorate; and lower houses called "Assemblies," elected by the full provincial electorate.

In one important respect the electoral system remained unaltered. In spite of a strong, but mistaken, agitation, in India, and in contradiction to the pre-conceived ideas of the politicians who framed the Act, the distribution of seats was still based on the communal principle of separate electorates for different religions and social communities.

Parties were numerous, but one party, the Congress Party, was of overpowering importance. It claimed complete independence for India, and had announced its intention of entering the new legislatures only in order to obstruct their working and to effect a breakdown of the new constitution

Secondly, the prolonged slump in the prices of agricultural produce had hit the deeply indebted Indian peasantry very hard, particularly in areas under landlord rule so that the workers had been stirred out of their age-long political apathy. "Kisan" (peasant) organizations were created, starting from the tenantry of the Tenuridars in the United Provinces, and the relatively prosperous and independent ryots of the Kistna-Godavari delta. These latter found a leader in Prof. N. G. Ranga, himself the son of a Kistna ryot, who won a seat on the Legislative Assembly, and organized an All-India Peasant movement. When Mr. Jawaharlal Nehru returned from England to India, he was elected President of the Congress Party, and put himself at the head of the peasant movement. Thus the two currents of feeling of nationalist aspiration and agrarian discontent were fused, and the Congress Party developed a definite Left Wing.

The election results as given in the *Manchester Guardian*, are here summarized. Out of some 260 seats elected and nominated on the six Councils,¹ the Congress Party secured 53 seats, there being 39 still to be elected, the Moderate and Moslem parties together, 72, and they are sure of 27 more. But in Bombay, where the party still commands the adherence of many mill-owners, it got an absolute majority, 16 seats out of 30, and it nearly attained the same measure of success in Madras, where it captured 26 seats out of 56 or 58. On the other four Councils it had little or no success.

In the elections for the Provincial Assemblies, the Party secured 724 seats out of a total of 1683 members, elected and nominated, against only 583 won by all other parties put together. It had little success in Bengal, Assam, Sind, Punjab, and the North-West Frontier Province, but it succeeded in winning absolute majorities in the remaining six provinces, varying from the barest possible majority of 88 seats out of 175 in Bombay, to a practically clean sweep of 159 out of 215 in Madras.

Nehru's homeland, the United Provinces, gave his party 128 seats out of 228, to the astonishment of the Government, which had expected the landlord (National Agricultural) party to hold its own. Still more exciting was the result of Nehru's whirlwind campaign in Bihar, which gave the Congress Party 95 seats out of 132, though it did not secure a single seat in the Council. The contrast with Bombay where the Party is still supported by many millowners, and its Right Wing is dominant, and a bare majority was secured in the Council and Assembly alike, is very significant.

¹ Bengal, Madras, Bombay, U. P., Bihar and Assam.



POLITICAL AND SOCIAL LIFE

1. The Shutur Sawar, camel orderly. India is defended mainly by Indian arms. 2. The heir apparent of Baroda on a state elephant at the Dassera Festival. 3. Beggar in Madras. The alms he has received are partly in money and partly in rice. The devout Hindu feels that an alms, even if a minute one, should be given to every beggar. 4. Gandhi's supporters in the civil disobedience campaign making salt in defiance of the law. 5. A street in Khajraho. The houses are little more than canvas coverings. 6. Indian women voting in the Parliamentary elections in Calcutta.

Photos: Indian State Railways; Keystone; M. Misra; Topical

In Madras Presidency the Right Wing of the Congress Party was dominant in the southern Tamil-speaking area, while the Peasant movement carried the election in the northern Telegu-speaking area. Taking India as a whole, the success of the nationalists was so great as to surpass their own highest hopes, and it must be remembered that on many issues it is likely to have the support of many representatives of Moslems and other parties.

The question then became all important, would the Congress Party adhere to its previous declarations, or would it, in view of the unexpected situation, decide to accept office where, being the largest party in the provincial Assembly, it was invited to do so by the Governor, and attempt to work the constitution in accordance with its own ideas.

At a meeting of the central executive of the party held in Delhi, a motion by Mr. C. Rajagopalachariar, the leader of the party in Madras, in favour of the acceptance of office, was carried by a substantial majority, or the understanding that the powers of governors of overriding the elected legislative chambers would not be exercised, except in extreme cases.

The party realized that such a promise was not within the powers of the Governors, and, in fact, they refused to give it. Partly in consequence of this refusal, but mainly because Gandhi and Nehru were determined to wreck the constitution, the Congress Party finally decided to refuse office. Interim ministries were then formed from minority parties.

SORABJI, CORNELIA. Born at Nasik in the Bombay Presidency, her parents were Parsees by nationality, but devout Christians. She was brought up in English traditions and had a brilliant academic career, and was the first woman to act as Professor of English Literature at the Deccan College in Poona. Later, she studied at Somerville College, Oxford, and took the degree of Bachelor of Civil Law in 1893. On her return to India she was appointed Legal Adviser to *purdah* women, Court of Wards, and Consulting Counsel by the Government of Bengal. She organized the Bengal League of Social Service, having for its objective village welfare work. Miss Sorabji was called to the Bar from Lincoln's Inn as late as 1923, and it was then that she was enrolled as the first woman advocate of the Calcutta High Court.

She is a prolific contributor to newspapers and has written a number of books about her country, her latest being *India Recalled*, published in 1936.

SPORTS AND PASTIMES. Games, as the people of Britain know them, were prac-

tically unknown till sixty years ago, when cricket first was introduced to schools and colleges through the British. With regard to indoor games, there was chess, with the old Arabic cry "*Sheikh mud*" ("the King is dead"), which we call "check mate." The Mogul Emperors had a marble chess-board in Agra Palace, on which living pieces stood and moved. *Pachisi*, or "Homeward-bound," is also an Eastern game. The famous Hyder Hearsy, the half-breed soldier adventurer, had, it was said, a Pachisi board tattooed on his ample abdomen, on which his wives played while he slept. Of outdoor games, far away in the Himalayas, small chieftains played a ball game on mountain ponies, from which it is said the British evolved polo.

The Indian did not play games, but had a desire to be amused at someone else's expense, and eagerly watched any show, a *tamasha*, given by some chief or noble. Sword and shield fought sword and shield, quarter-staff fought quarter-staff, while the public applauded. Wrestling after the Cumberland style was, and is, outside the regiments, a sport of the professional, eagerly watched and betted on. In the India regiments there are always fine wrestlers.

The fighting of rams, of buffaloes, and of elephants are the favourite sights of great occasions, while cock-fighting has always been popular. Quail and chikor, the latter a red-legged partridge, are most popular as fighting birds, and much money will change hands at a main of such.

Of sport in the sense of the hunting and shooting of animals, whose speed is pitted against your skill, there is little. The wealthy Indian of the martial classes will shoot tigers, and the lesser carnivora and wild pig, from safety; but other shooting of deer, bear, etc., save for self-preservation or gain, does not exist. The spearing of wild boar in the open, the sport at times of the gentry, was not brought to any level of performance until the British took it up.

Among the "gentry" of India—the chiefs, barons, and landowners—hawking in all its forms has been carried on with *baz* and *bashaw*, from the humble quail and partridge as quarry to the great bustard.

Modern Sports and Games. With the coming of the British, some sense of the sporting chase and killing has come, as distinct from the *baitue* instinct. It is the British in India who have developed the shooting of big and small game as an affair of skill. The mountain sheep and goats, the ibex, the markhor, and the various great mountain sheep, are sport for the British alone, and the desire to live arduous lives and climb thousands of feet

¹ As often written, *sheikh mud*, the resemblance is even more patent.



SPORTS AND PASTIMES

1. Gunga, champion Punjabi wrestler, in a bout with Kramer (left the German wrestler. Wrestling is an ancient sport in India.
2. Finish of a boat race on a Burmese river. The man in the water has jumped overboard from the winning boat to obtain the trophy, which is lashed to the staging in the centre.
3. Archers of the Khoti Hills in a contest at Simla.
4. Children enjoying themselves on a primitive roundabout during the Mohammedan festival of Mohurrum.
5. Indian folk-dancing.

Photos: Keystone; Sport and General

is a purely Western conception of pleasure. Similarly with small game, the shooting of snipe, quail, duck or partridge, and other game birds, save by stalking for the pot, appeals to few Indians. The British in India are, however, great shooters of small game, and the quantities of snipe and duck obtainable in many parts during the winter adds greatly to the zest of life. The princes and chiefs of India are, of course, keen on tigers, as are men of the British Services who can get into a tiger or panther district.

Polo, the game *par excellence* of officers of the Army in India, has become popular with the Princes of States, who spend large sums of money on good ponies and players. Some of the princes and their followers are among the finest players in the world, and are well

known at Hurlingham. Indian officers of cavalry have also achieved fame.

Hunting in India is at a discount. There is little country to ride over, and there are few packs that meet with good sport. The Peshawar Vale on the frontier and Ootacamund Hunts on the high southern downs are, however, famous, the latter for galloping and the former for rough cross-country jumping. The jackal, and not the fox, is hunted. The Delhi Hunt has come to the fore in recent years. There is a good deal of quiet coursing with longdogs.

Wherever the Briton goes, comes cricket and, of late years, Association football and hockey, tennis, and golf. In the earlier years, however, cricket was almost the only British game; and some sixty years ago,

with the establishment of schools and universities, cricket became popular. At first, the Parsees, and then the Hindu and modern intelligentsia, took to the game, followed by the children in the streets. From then to the present day, proficiency in the game has increased till we see an All-Indian team in England and Indian cricketers playing in All-England elevens, while the career of the famous Prince Ranjitsinghjee is an epic in the history of British cricket.

Lawn tennis has appealed also to the Indian in the universities, and Indian players should achieve world honours at no late date. Association football and hockey have also been developed both in the Indian regiments as well as among the European troops, and tournaments are constantly in progress. The Indian schools and colleges have also taken them up with great zeal and attain considerable proficiency. Bengal especially has taken up football. The Indian hockey team has won the championship at the Olympic Games on several occasions.

Racquets and billiards are the games of the European clubs and regimental messes.

Golf is one of the Europeans' games, and, though there are links at every station, yet, owing to climatic conditions, not a dozen are worthy of the name, turf being non-existent.

Horse-racing is a delight to Indians of all grades. Famous race meetings at Calcutta, Madras, Bombay, Lucknow, Lahore, etc., are on a par with some of the best English racing. Many Indian merchants own race-horses, and the whole of India loves a bet. Indian jockeys have attained a considerable reputation.

Soldiers of the Indian regiments and students, but especially the former, take kindly to the ordinary athleticism of running and jumping.

But when all is said and done, game playing in India and sport of any kind is the pursuit of few. The many million agriculturists see nothing of it, pursuing their simple way unmoved, yet always eager to watch, even if they do not understand, anything in the nature of a *lamasha* that may come their way.

SULAIMAN, DR. SIR SHAH MOHAMMED (born 1886). The first Indian to be appointed a Federal Court Judge. He was born at Jaunpur, in the United Provinces, of Moslem parents. He studied at Allahabad University and Cambridge, and was called to the Bar from the Middle Temple, London.

Dr. Sulaiman returned to India in 1911 and was enrolled as an advocate of the Allahabad High Court. At the early age of 34 he was raised to the Bench, and later became Chief Justice.

Sir Shah Mohammed takes a keen interest in the higher education in his Province. He is a member of the Executive Council of the Aligarh Moslem University, Allahabad University, and a number of other educational bodies. He was President of the Academy of Science in 1934 and President of the Mathematical Association, Allahabad, in 1936. He was a member of the Capitulation Tribunal in London in 1932-33.

He still continues his studies in mathematics, and has in recent years published a new Relativity theory. He has recently been appointed as one of the first two judges of the Federal High Court of India created under the Government of India Act of 1935.

SULTAN JAHAN BEGUM, BEGUM OF BHOPAL (1858-1930). The fourth woman in succession to rule Bhopal. She was of an ancient Afghan family. Married in 1875, she succeeded to the throne in 1901.

The Begum brought a vigorous, original, and well-stocked mind to the administration of her State. She toured frequently in her large territory and acquired a first-hand knowledge of the conditions and requirements of her people. She opened schools in different towns, and encouraged agricultural and industrial development.

She took a deep interest in all that concerned the welfare of her subjects, especially the women. One of her earliest resolves was to place the opportunities for cultivation of mind, which she had enjoyed, as far as possible, within the reach of all the women in her State. She founded many girls' schools and medical institutions, and also a *Purdah Ladies' Club* in Bhopal.

The Begum visited Europe in 1911 and 1925. In 1926 she abdicated in favour of her second son, Prince Hamidulla Khan.

SUTLEJ, RIVER. See article, Vol. VIII.

SUTTEE. See article, Vol. VIII.

SWARAJ. See article, Vol. VIII.

TAGORE, DR. ABANINDRA NATH (born 1871). The founder of the new school of painting in Bengal. He was born in Calcutta of a Hindu family. After much study, he abandoned the European routine of technical work and devoted himself to a close study of the Ajanta paintings. He has not simply imitated the old painting; he has revived it, adapting the shape and substance in such a manner that they do not appear misplaced in the light of the twentieth century. In matters of technique he has adopted a compromise between European and Indian methods.

He teaches in the Seminary of Oriental Art, which he himself founded; and is Professor of Fine Arts in Calcutta University. The subjects chosen by the new Calcutta school of painting are taken from Indian



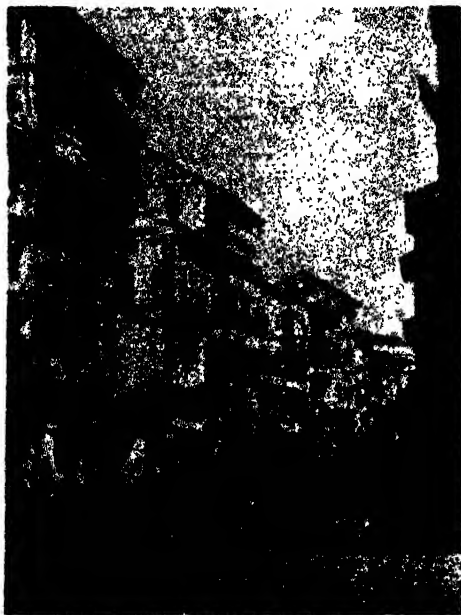
SPORTS AND PASTIMES

1. The Punjab scoring a goal against Bengal in the Basket-ball tournament at the All-India Olympic Games. 2. J. Hart winning the 100 metres final at the All-India Olympic Games. 3. Hodson Horse scoring against 13th DOC Lancers in the Hodson Horse Challenge Cup match at Lahore. 4. Duck shooting near Bombay. There is great sport to be had with the large quantities of duck to be found on many rivers. 5. Point to point race organized by the Lahore Hunt. 6. India batting against the M.C.C. at Bombay. Indians have shown a remarkable aptitude for cricket. 7. Beaters and the flag elephant, which carries the scorers, at the Kadir Cup pig-sticking contest.

Photos: Sport and General

history, romance, and epic, and from mythology and religious literature, as well as from the life of the people around them.

TAGORE, MAHARISHI DEBENDRA NATH (1817-1905). Patriarch of the monotheistic movement of modern India. Debendra Nath was born in Calcutta, the son of Prince Dwarika Nath Tagore. He was educated in the Calcutta Sanskrit College and brought up as an orthodox Hindu. When 21 he passed through a decided spiritual change and became strictly monotheistic, and two years later he formed *Tattwabodhini Sabha* (Truth-



STREET SCENE, BOMBAY
Photo: Indian State Railways

teaching Association) for religious discussion and worship, subsequently merged into the Brahmo Samaj. He also started a monthly, called *Truth-teaching Journal*, and founded a Vedic School to train Brahmo missionaries. He also drew up for the Brahmos what is known as the Brahmo Covenant, a list of vows to be taken by everyone on becoming a member of the Samaj. Further, he introduced a brief form of prayers and adoration, called *Brahmaprasana*, worship of Brahma (the Creator). The direct communion of the human soul with the supreme Spirit was the most salient point in his teaching. The last forty years of his life he spent in retirement and devotional exercises.

TAGORE, SIR RABINDRANATH. See article Vol. VIII.

TAILOR BIRD. See article, Vol. VIII.

TATA, JAMSETJI NUSSERWANJI (1839-1904). Indian merchant prince and captain of industry.

Jamsetji was born at Navsari of Parsee parents belonging to the priestly caste. He was educated in Bombay at Elphinstone College. He made a small beginning as a merchant trading with China. From general trading he turned to manufacturing on modern scientific lines, first starting cotton mills. His name will always be associated with the three epoch-making projects which he set on foot—the iron and steel works at Jamshedpur, the hydro-electric schemes which supply Bombay with an abundance of cheap and clean power, and the Indian Science Institute at Bangalore for post-graduate training to fit Indians for industrial life.

TATA, SIR DORABJI JAMSETJI (1859-1932). Born in Bombay, a son of the late Jamsetji N. Tata, captain of Indian industry. He was educated at Bombay and Cambridge.

Sir Dorab was Chairman of Tata Sons, Ltd., and the Tata companies. He was the President of the Indian Industrial Conference in 1915 and was member of the Indian Industrial Commission in 1916-1918. He left most of his vast fortune to charity.

TAPTI RIVER. It rises in the Satpura Range, near Multan in the Central Provinces and flows westward. Soon after entering the Bombay Presidency it is joined by the Purna River, and the full stream enters the plain which divides the Western Ghats from the Satpura Range. The Tapi receives other tributaries before it enters the Arabian Sea. The river is affected by the tides for 10 miles above Surat, which lies some 20 miles from the mouth, but vessels of any size are prevented by the silting up of the channel from entering it.

THAKURDAS, SIR PURSHOTAMDAS (born 1879). Prominent business man. Thakurdas was born in Bombay of Gujarati Hindu parents. He entered the firm of Messrs. Narandas Rajaram & Co., cotton merchants and exporters, as apprentice in 1902, and subsequently became a partner and head of the firm in Bombay.

Sir Purshotamdass is President of the East India Cotton Association, and Chairman of the Bombay Electric Supply and Tramways Co. and the Oriental Government Security Life Assurance Co.

He has served on several committees and Commissions, and was a delegate to the first Indian Round Table Conference on Indian Constitution in London. He is a Nationalist.

Sir Purshotamdass Thakurdas is the Chairman of the Committee of Unofficial Advisers appointed by the Government of India in connexion with a new Indo-British Trade Treaty, 1936.

THACKERSEY, SIR VITHALDAS (1873-1922). Indian industrialist. He was born in Bombay in the Bhatia community famed for its outstanding eminence in industrial and mercantile pursuits. He began business after leaving school and entered public life about the year 1897, when he was elected to the Bombay Municipal Corporation, of which he was elected President in 1907. In 1903 he was nominated by the Bombay Government as a member of the Provincial Legislature. Later he was elected to the Imperial Legislative Council.

Sir Vithaldas was a pioneer in the industrial field. He took the initiative in bringing into existence a large number of business concerns for the manufacture of cement, carbonic gas, agricultural implements, etc. He founded the Bank of Mysore, and helped to establish the Bombay Central Co-operative Institute and the Bombay Provincial Co-operative Bank. He made liberal benefactions to a number of institutions and causes which laboured for the educational and social advance of the people.

TILAK, BAL GANGADHAR (1856-1921). Indian religious leader, educationist, and politician. Tilak was born at Ratnagiri of poor Brahmin parents. With a band of University men he started the Fergusson College in Poona to educate young men for a life under modern conditions. Simultaneously with the educational work, Tilak started *The Kesari* (Marathi daily) and *The Maharashtra* (English weekly), both journals which gave powerful expression to the political mind of the Marathas. He resigned his professorship in 1890 to give him more time for journalistic and political work. He initiated in 1895 the Shivaji Commemoration Movement. His object was to rouse the energies of the people, especially the Marathas, by celebrating festivals in honour of their national hero.

Tilak became a dominant personality in the National Congress and a leader of the left-wing section in politics, though conservative in matters of religious and social reform. He was twice sentenced to imprisonment for sedition.

He was a great Sanskrit scholar. His *Orion* and *Arctic Home* acquired immediate world-wide recognition. His work on the *Gietha* (Hindu Scriptures), an original criticism and presentation of ethical truth, was his masterpiece.

TRADE. A short-period study of India's trade is apt to give the impression that it is unchanging in character; but, taken over a long period, India's trade has changed very considerably in direction as well as in the articles entering the trade, thus showing how it has adjusted itself to world economy.

There are good grounds for believing that India's commercial intercourse with the outside world was well established some centuries before the beginning of the Christian era. This commerce proceeded along three well-known routes: (1) The Persian Gulf route from the mouth of the River Indus to the Euphrates and up that river to the Levantine ports; (2) the overland route through the mountain pass on the North-West on to the Caspian Sea; and (3) the sea route along the Persian and Arabian Gulfs up to Aden, and from there up the Red Sea to Suez. This commerce was not, of course, comparable either in character or extent to modern trade. It was hardly ever direct, and the commodities were bartered and changed hands several times on their way to the West. Generally speaking, the trade was confined to articles of high value and comparatively small bulk. India then sent out costly muslins of the finest texture, silks, spices, precious stones and, in return, obtained copper, tin and lead, corals and precious metals. These features of the trade continued until the seventeenth century, and even later, for the East India Company, in its early years of existence, was not successful in shipping merchandise to India on any large scale. In spite of the efforts to the contrary, bullion figured largely in the exports from England to India.

In the first half of the nineteenth century a remarkable change was brought about in the character of the trade between India and the outside world. Establishment of British rule in India, with the resulting revenue and judicial administration, remarkable developments in the means of transport and communication, following upon the application of steam, opening of the Suez Canal, and improvement of internal communications in India, were some of the causes which contributed to this change. Instead of sending out articles light in bulk, but high in value, India started sending out articles heavy in bulk, but low in value; in other words, she started exporting raw materials and food products, and received in return finished goods, to the manufacture of which the industrial revolution gave great impetus. One feature, however, was common to this period and the earlier times described before, namely, the continued absorption of precious metals by India.

In 1849 the value of Indian exports was only £10,000,000, and important items entering the trade were—

Opium	36%	of the total exports
Indigo	13%	" "
Sugar and Candy	11%	" "
Cotton	11%	" "
Silk	61%	" "

The United Kingdom took 48 per cent and China 40 per cent of these exports. Events were taking place in the Western world which were to thrust cotton into prominence. From 1780 to 1830 America had attained considerable importance as a cotton-growing country and was the principal source of the cotton needed by the growing Lancashire industry. India, too, had started exporting cotton about this time, but these exports were a much more important item in her trade with China than with England. The British cotton manufacturers, however, had

the cotton exports accounted for one-third of the total, being the largest single item of export. Sugar and silk had lost their importance by this time as exports, but the indigo exports still accounted for 6½ per cent of the total; while opium exports, valued at £12,500,000, worked out at 21 per cent of the total exports. New important items claimed a place in the export trade. Grain, 8 per cent of the total exports; jute, raw and manufactured, 7 per cent; seeds, 4½ per cent; hides and skins, 2½ per cent; and tea, 2½ per cent.



MERCHANT SHIPPING ON THE HUGLI RIVER AT CALCUTTA

The cloudy sky foretells the coming of the monsoon

Photo Keystone

started taking an interest in Indian cotton, to which the failure of the American cotton crop in 1846 gave a fillip. The American Civil War of 1848 brought matters to a head, and a complete stoppage of American supplies created a certain and most effective demand for Indian cotton. The Government appointed Cotton Commissioners in certain selected tracts to give all possible help to cotton cultivation by pushing forward construction of roads and railways, and taking other similar measures; and the cultivators also seized the opportunity of extra profit, with the result that cotton cultivation was extended enormously. Between 1859 and 1864 the price of cotton increased more than fivefold, and, due to the rise in price combined with the increase in quantities exported, the value of India's total exports of cotton, as well as of other exports, increased enormously within a few years. In 1872 the total exports were valued at £63,000,000 and

In order to appreciate the changes in the foreign trade, some information about the economic background is essential. The establishment of the revenue and judicial systems under British rule gave security of tenure to the cultivating classes; at least in the Ryotwari tracts, subject to the condition that rents and other Government dues were paid, the cultivator enjoyed the rights of free transfer and absolute ownership. Due to the general trade expansion, the crops of the cultivators acquired a distinct market value, and they knew what crops would bring them extra profit. Thus there was a gradual switch over from food crops, which were mainly consumed locally, to what are known as money crops, like cotton and jute. This process was greatly helped by the improved internal communications. Before 1850 these were in an appalling state. There were very few roads in the Madras or Bombay Presidencies, and the only trunk road in the

north was from Calcutta to Benares. The creation of a Public Works Department during the Governor-Generalship of Lord Dalhousie made possible a rapid expansion of roads, with due regard to military requirements and the necessity for feeders to the great railway trunk lines. The expansion of railways was also due to the initiative of this able and far-seeing Governor-General. An experimental line was constructed in 1849 near Calcutta, and five years later the first railway was opened for passengers. The following decade witnessed an encouraging growth of railways, and by 1869 there were 5015 miles of railways opened for traffic, as against 432 miles in 1859. These improvements in internal communication made labour mobile as never before, and the road building and railway construction, by increasing enormously the demand for labour, created a class of general casual labourer. Although the railways and the public works department competed with the landlords and tenant cultivators for labour which was eventually supplied by the class of field labourers and poorer cultivators, yet the new mobility of labour, its improved purchasing power and increased efficiency resulting from contact with town life, constituted a great gain to the Indian agriculture, industry, and trade.

In 1872 two forms of industrial activity, namely, plantation and the factory industry, were fairly well established, and their repercussions on trade deserve more than passing notice. The manufacture of indigo by European planters dates back to the eighteenth century, and the East India Company was actively interested in the trade. The American competition and the adulteration of the dye, however, adversely affected the indigo trade. Although the efforts of the East India Company led to a revival between 1850 and 1860, it failed to make any further progress during the next twenty years, and the trade was finally crippled by the discovery of synthetic dyes. The tea industry started later than the indigo industry, but made encouraging progress between 1850 and 1871. In 1850 there was only one estate with 1876 acres under cultivation and an output of 216,000 lb. By 1871 the total number of estates under separate ownership was 295, the total area under cultivation being a little over 21,000 acres and the output exceeding 6,000,000 lb. Due to speculative activities and hasty clearing of wild estates, the industry suffered a reverse in 1868, but turned the corner and was firmly established by 1871. The production of coffee by European planters was first started in 1840. By 1860 they were settled in an almost continuous chain of estates in parts

of Mysore and in Coorg and Wynaad beyond, and from 1860 to 1870 coffee exports increased nearly tenfold.

The cotton industry had not made much progress by 1874-75. The first cotton mill started work in Bombay as far back as 1856, but the high cotton prices, the trade depression following upon the cotton boom, and the after effects on trade of the Franco-German war retarded the progress of the cotton industry for a decade or two; but by 1879 the number of cotton mills had risen to 156, giving employment to over 40,000 persons. By then the steam gins and presses had made rapid progress, and were set up in the cotton-growing areas, with the result that only a small quantity of unpressed cotton reached the ports.

The trade in jute was important in the early days of the East India Company on account of its use for the manufacture of cordage and ropes. Until 1830 the Bengal hand-loom turned out gunny bags and jute cloth, but owing to the competition of the new jute manufacturing industry at Dundee about this time it became more profitable to export raw jute than manufacture gunny bags in India. The growing importance of jute as material for cordage, ropes, sacking, etc., and the cessation of supplies of Russian hemp, due to the Crimean War, greatly stimulated the cultivation of jute. In 1854 the first jute mill was started by Mr. Ackland at Serampore. In the next ten years another mill was started, but in the following decade the growth of the industry was rapid. India had almost the world monopoly of jute, which proved a great source of strength to the new Bengal industry. By 1882 twenty jute mills were working, eighteen out of them in Bengal, employing 20,000 people. The growth of the export trade in raw jute also led to the establishment of the jute pressing industry.

Then in the same period the tanning industry came to be established in Madras. Improved methods of tanning were first introduced in Madras city about 1845, and spread to the other important towns of the Presidency, with the result that an export trade in Indian tanned hides and skins grew up. At first the United Kingdom was the only country importing these tanned hides and skins; but after the Franco-German war, Germany took an important share in the trade, and by 1875, due to the repeal of the 3 per cent export duty and the expansion of the railways system enabling Madras tanners to draw upon the supplies of hides and skins in the countryside, the export trade in tanned hides and skins became prosperous.

Coming to the period of five years before

the World War, the value of the total exports had risen to £146,500,000. The most important group of exports was "grain, pulse, and flour" at £30,500,000, rice accounting for £17,000,000, wheat £9,500,000, and other grain about £4,000,000. The value of the exports of jute, raw and manufactured, had reached £28.3 million. Exports of raw cotton were still improving, being valued at £22.2 million, though they worked out a smaller percentage of the total exports than before. The exports of oil seeds were valued at £16,500,000; hides and skins, raw and tanned, £9,750,000; tea, £8,750,000; and the new item of cotton manufactures, mostly yarn, was worth about £8,000,000. The exports of opium were still worth £6,750,000, representing only 4 per cent of the total exports, instead of 36 per cent as in 1849.

It will be seen that the economic changes described at some length above were still working towards the end of the period under review. India had become chiefly a supplier of raw materials, except for the activities of the two foremost textile industries, cotton and jute. The areas under the industrial crops, such as oil-seeds and cotton, were increasing, owing to the demand for them from the Western world, and similarly the export of food grains was stimulated. As against this, the area under crops like opium and indigo declined, the former due to the agreement of the Government of India with the Chinese Government, and the latter to the competition of the synthetic dyes.

Throughout this period, from 1850 to 1914, the imports of merchandise into India were steadily increasing, and cotton manufactures continued to be the most important single item. The Lancashire cotton industry had made great strides by the middle of the nineteenth century, and the imports of cotton piece-goods represented about one-half of the total imports of foreign merchandise into India. In 1869-70, out of the total imports valued at £21,946,660, cotton manufactures accounted for £10,846,680 as against £3,000,000 in 1849. By 1872 the value of these imports had gone up to £17,500,000, and during the pre-War quinquennium their values remained steady at an average of £35,000,000. The traditional customs of the Indian population kept up the demand for particular classes of these manufactures in different parts of India. Thus the unbleached "Dhooti" and "Sari," the staple imports from Manchester, were worn by millions in Bengal and Madras. The Burman, on the other hand, preferred coloured garments, and the proportion of coloured piece-goods to the total imports of piece-goods into Burma was as high as 50 per cent in 1913-14. The increase in the

imports of these manufactured goods, however, was accompanied by a steady growth in India's own industrial production. Although its effects will be seen in the figures relating to a later period, it is this industrial development which accounts for the increase in the imports of machinery and metals during the period now under review. These were valued at £1,250,000 in 1849, rose to £2,750,000 in 1872, and to about £14,500,000 during the period of five years before the War.

Other items deserving notice which appeared at various stages during the period were the imports under the heads wines and beers, copper for domestic utensils, iron and steel, salt, mineral oil, matches, provisions, and spices. About 1869-70 the imports under the group wines, beers, and spirits were valued at more than £1,000,000, copper for domestic utensils at £90,660, iron and steel at £873,330, and salt at £15,000. Sugar had not taken a prominent place at the time, but by 1897-98 the total imports amounted to 212,000 tons, beet sugar accounting for one-half of them. Mauritius, the principal source of sugar supplies, doubled its shipments by 1903-4, and Java about the same time increased its supplies from 7000 to 56,000 tons. By 1913-14, Java made still further progress and supplied 583,000 tons out of the total imports of 803,000 tons. The imports of iron, steel, and machinery went up by leaps and bounds. In 1903-4 they totalled 459,155 tons, registering an advance of nearly 85 per cent on the figures for 1898-99. In 1913-14 the total imports advanced to 1,015,552 tons. Most of these imports consisted of galvanized sheets. Similarly, imports of machinery and mill material were twice in value what they were in 1903-4.

The first effect of the outbreak of the World War on India was a considerable dislocation of trade due to the stoppage of all commercial relations with the Central European Powers, which had been for some time, and particularly in the twelve months preceding the outbreak of war, good customers for her raw materials. Germany, for instance, was one of the best customers for raw jute and cotton. The invasion of Belgium and the part-occupation of France adversely affected the oil-seeds trade in general, and the ground-nut trade in particular, for which Marseilles was a considerable *entrepôt* centre. The lack of freight, due to the peremptory need of satisfying the demand for military transport, and the elimination of Austrian and German shipping, further retarded the trade, but India soon adapted herself to the war conditions. The trench warfare on the Western Front set up a great demand for sandbags. The manufacture of boots for the new armies



TRADE

1. Indian housewives going to market in Cochin State. 2. Khasi women of Assam selling textile goods at the roadside. 3. Water-carriers at Hubli, Bombay Presidency. An extensive trade is done in the sale of water for drinking purpose. 4. Unloading jute which has been carried to the sheds by boat. In the peak year, 1925-26, raw jute exports were valued at £27,500,000. 5. Drying fish. Owing to the climate and the low price of food little trade inland is done in fresh fish. 6. Wharf at Bedi Baudar, Janinagar. The boats are the local ones into which the goods are unloaded from the ocean steamers. 7. Wheat in heaps and in bags along the banks of the Indus near Sukkur. The level of grain production in the Punjab is steadily rising owing to irrigation from the Sukkur Barrage.

Photos: Indian State Railways; M. Melward; Keystone

increased enormously the demand for hides. Japan, which in the meantime was making progress as a manufacturer of cotton goods, increased her offtake of raw cotton; exports of tea, jute bags and cloth, raw wool, and shipments of wheat on Government account increased enormously in 1915-16. In the following year the exports of raw cotton, saltpetre, shellac, and indigo benefited greatly on account of the increase in the price, and by 1917-18 the intensive demand of the

goods and grant suitable credit facilities. By 1918-19 the share of the United Kingdom in the import trade had declined to 45.5 per cent; Germany was eliminated completely, and Japan's share, as a result of Germany's displacement, increased to 19.5 per cent. The share of the United States of America had risen to 9.5 per cent. Both Japan and the United States of America owed their advance during the War years to the fact that the supplies of iron and steel and other



BALES OF COTTON AWAITING SHIPMENT

Photo: Indian Trade Commissioner

armies for the export of commodities of vital importance to them gave great impetus to industrial development. In 1918-19 the price of food grains appreciated considerably on account of the failure of the rains, the rice crop being deficient by 25 per cent and the wheat crop by 35 per cent. The most interesting effect of the War on Indian import trade was the change in the share of the various countries in it. In 1913-14 the share of the United Kingdom in the imports into India worked out at 64 per cent, Germany came next with 6.9 per cent, and Japan and the United States a little lower with 2.6 per cent. The increase in the imports from Germany into India before the War was due to the special technical skill developed by that country in certain lines, and to its ability to turn out inexpensive

products from the United Kingdom, their particular source, now came from them. Japanese imports of glass and glassware, cotton piece-goods, paper, and pasteboard also attained considerable importance; and large quantities of dye stuffs came from the U.S.A.

The post-War period falls into two distinct sub-periods, separated by an interval which witnessed the reaction from the boom conditions generated by the War. In the year following the cessation of hostilities, trade was brisk, due to the removal of war-time prohibitions and a relaxation of restrictions on commercial intercourse with the enemy countries, accompanied by an improvement in the freight position. The export of raw jute, oil-seeds, and hides and skins was encouraged, but the Government

control on the export of food-stuffs, such as wheat and rice, continued owing to the crop failure in 1918-19. A reaction, however, set in 1920-21; the United Kingdom and Japan showed signs of satiety, Russia and Central Europe were "short," but unable to buy, the falling tendency of prices and the instability of exchanges hampered business, but the effects of the depression on the import side were slower in their operation, and a steady flow of goods turned the balance of trade against India to the extent of £53,000,000. The import trade, however, was soon adversely affected by the increased stocks on the hands of the merchants. This, together with the economic exhaustion of Europe and the chaotic condition of exchanges, which militated against the exports, soon brought about a state of stagnation. Political propaganda, as well as the falling prices, were responsible for a remarkable curtailment of the imports of cotton piece-goods, but the imports of wheat, sugar, and machinery were large. Things, however, improved gradually, and from 1924-25 the total value of exports averaged as much as £265,000,000. In the peak year 1925-26, the value of the jute exports alone went up to £27,500,000, and those of cotton to £71,250,000.

India, however, could not escape the world depression which set in in 1929-30. Being an agricultural country, the collapse of the prices of most primary commodities hit her hard. The effects of depression and the restricted markets on the Continent are reflected in the latest available trade figures. The group "grain, pulse, and flour," which had in the pre-war days attained the value of £30,500,000 in the list of exports, dropped to £9.3 million in 1935-36.

One reason for this decline, however, was the practical disappearance of wheat from the exports on account of the internal prices being out of line with the world parity. The exports of rice, which also formed an important item of this group, declined from 2,440,000 tons to 1,414,000 tons, the value fell from £17,000,000 to £8,250,000. The exports of oil-seeds suffered both in quantity and value, with the exception of ground-nuts, the total exports of which increased in quantity as well as in value. The fall in the oil-seeds group was from £16,500,000 to approximately £7,750,000. There was similarly a heavy fall in the export of hides and skins to the extent of a little under 50 per cent in quantity and well over that in value. Textiles, however, kept up fairly well. The value of the exports of jute, raw and manufactured, declined from £31.8 million to £27.9 million. The jute manufactures increased in quantity and value. The exports

of raw jute fell in value. The quantity of raw cotton exported increased from 430,000 tons to 606,000, but the value remained steady at approximately £25,000,000. Tea alone of all the exports improved in quantity as well as in value. The quantity went up from 266,000,000 lb. to 312,000,000 lb.; the value from £9,750,000 to £15,000,000. The export of cotton manufactures declined from £8,000,000 to £2,000,000, due to the practical disappearance of yarn exports, although piece-goods exports actually increased. The decline in the export of yarn was due to the increased consumption in the Indian cloth mills. The import trade showed considerable shrinkage principally due to India's contraction of demand for normal consumable goods caused by her decreased purchasing power, and to the industrial development helped by the war years and strengthened by the deliberate policy of discriminating protection since 1923. Thus cotton manufactures fell from the pre-war figures of £35,000,000 to £15,750,000 in 1935-36, and iron and steel from £7,500,000 to £4,500,000. Imports of sugar decreased from £10,000,000 to less than £1,500,000. It has to be noted, however, that other heads of imports of manufactures like chemicals, cutlery, dyes, electrical goods, machinery, paper, and motor vehicles showed a remarkable activity. In the aggregate these imports advanced from £12,500,000 to £22,500,000 in 1935-36, despite the depression. These figures also give an indication of the direction in which the import trade is likely to prove profitable in the near future.

There is one remarkable trade development which has taken place since the United Kingdom went off the gold standard, and that is that export of gold has attained considerable magnitude and has been of great help in maintaining a favourable balance of trade. Throughout the fifty years before the war, India had on a balance exported more merchandise than she had imported. The result was that the balance of trade was strongly in her favour and, in order to set right the excess of exports over imports, she has imported year by year large quantities of gold. Average figures for the five years ending 1913-14, 1923-24, and 1928-29 would give some idea of the net absorption of gold (both coin and bullion) in India, in lakhs of rupees, in the pre-war and post-war years—

		(In lakhs of Rs. 1 lakh = £7500)
Average of five years ending	1913-14	Rs. 2704
"	" " 1923-24	" 2411
"	" " 1928-29	" 3080

Most of this gold was "hoarded," but since 1931 the reverse process of "de-hoarding" has started, and the net exports of gold from 1931-32 to 1935-36 have amounted to approximately Rs. 270 crores (1 crore = 100 lakhs). This is illustrative of India's capacity for taking advantage of the changes in the world economy.

Of all the measures taken to counteract the effects of the depression, prominence must be given to the Ottawa Agreement. The National Government of Great Britain instituted an economic programme, which included the imposition of a general tariff both for protective and revenue purposes early in 1932, and the scheme took concrete shape in the passing of the Import Duties Act. India felt that in the interests of her export trade she could not see herself left out of a scheme of reciprocal tariff arrangements which allowed free entry for certain products of the Dominions and the British Colonies. The United Kingdom was the largest single buyer of Indian goods, and India's position as an exporter of raw materials as well as manufactured goods was vulnerable. Accordingly a trade agreement was effected at Ottawa on 20th August, 1932, between Britain and India. The agreement was due to expire on the 13th November, 1936; but pending the result of the negotiations which are in progress between the two countries, the present arrangements will continue subject to termination at three months' notice on either side, unless the arrangements are replaced by a new agreement. In the event of failure to conclude a new agreement, neither party shall withdraw the existing preferences without prior consultation with the other party.

UNITED PROVINCES. See article, Vol. VIII.

VARMA, RAVI (1848-1906). Indian artist of the nineteenth century. He was born at Trivandrum of a family closely connected with the Royal House of Travancore. Instead of going to school, he was placed under a Sanskrit tutor to receive lessons in the Indian classics.

Ravi Varma had no regular training in art, but had learned Western technique and colouring under a European artist. In his pictures he followed the traditions of European art in interpreting Hindu mythology.

In 1890 he was commissioned by the Maharaja Gaekwar to paint a set of fourteen pictures for his palace in Baroda, representing chosen scenes from the epics, the Ramayana and the Mahabharata.

VIDYASAGAR, ISWAR CHANDRA BAN-
DOPADHYA (1820-1891). Indian educationist and social worker. Born at Birsiagha, in

Bengal, of a poor Brahmin family, he was educated at the Calcutta Sanskrit College.

At the age of twenty-one Iswar Chandra was appointed Head Pandit of Fort William College, where British civilians were taught the vernacular languages. Later he became Principal of the Sanskrit College and Inspector of Schools.

Englishmen inspired with a sincere desire to help the cause of progress in India found in Vidyasagar a worthy collaborator. He fought indomitably for female education and as Government officer he gave prompt effect to Sir Charles Wood's famous educational scheme of 1854.

He was instrumental in having the Hindu Widow Re-Marriage Act passed in the teeth of furious opposition from the general public. He strove also to awaken his compatriots to the truth that in Hindu religio-social laws a woman was always given the place of honour and was never treated as if she were a chattel, to which position she was brought down through ignorance.

Iswar Chandra was also an author of various publications in English and vernaculars.

VINDHYA RANGE. The Vindhya range may be said to begin where the Aravalli Hills turn south-east by Udaipur, for there is no real break between the two ranges. Continuing south-east until reaching Indore the Vindhya Range there turns east and runs parallel with the Satpura Range, from which it is divided by the Narmada River. Beyond the Amarkantak Plateau both ranges merge into the highland which extends into Bihar.

VISVESVARAYA, SIR MOKSHAGUNDAM (born 1861). Indian engineer. He was born in Mysore, took his degree in engineering from the Poona Science College, and later joined the Public Works Department of the Bombay Government, rising to be Superintending Engineer. On his retirement in 1908 he became Consulting Engineer to the Nizam's Government. He was Dewan of Mysore from 1912 to 1918.

Sir Mokshagundam has served on a number of economic and industrial committees. His publications include *Reconstructing India*.

VIVEKANANDA, SWAMI pseud. (i.e. Narendranath Dutt) (1863-1902). Narendranath was born in Calcutta of a Hindu family. Whilst at college he studied with equal zest the sciences, mathematics and philosophy. He loved philosophical discussions and it was this that later won for him the name of *Vivekananda* (discrimination).

From 1880 to 1884 he passed through a series of intellectual crises. He was attracted to Ramkrishna Paramhansa, who taught "oneness or brotherhood of all religions." He became his disciple and decided to devote



1. Seventh-century figure sculpture at Patadaka, Bombay Presidency. 2. Mecca Masjid, the tombs of the Nizams of Hyderabad. 3. Stone elephant on the bund at Palaurpet, Hyderabad State. 4. Street scene at Benares.

Photos: Indian State Railways, M. Millward

his life to the spread of his teaching. With this end in view he spent six years in the Himalayas in retirement before going out to preach. His preaching took the form of Hindu revivalism.

He also founded the Ramkrishna Mission to do philanthropic work, and at the principal centres of Hindu pilgrimage permanent charitable institutions were established, called Sevashrams "Homes of Service." Vivekanda voiced his teachings in America in 1893 and 1898, in England in 1893, and in France in 1900.

WACHA, SIR DINSHAW EDULJI (1844-1936). Last of the "builders of the Indian nation." Born in Bombay of middle-class Parsee parents, he devoted his time and energy to the cotton industry, journalism, and politics. He succeeded in all three. He was President of the Bombay Millowners' Association in 1917. As a journalist his articles on politics and finance were special features of the various Indian journals. He joined the Indian National Congress from its inception, was its Joint Secretary for a number of years, and President at the 1901 session in Calcutta. He left the Congress when it passed into the hands of "extremist" politicians.

In 1917 Sir Dinshaw was elected a member of the Imperial Council, and on the inauguration of the Montagu-Chelmsford reforms, he was given a place in the Council of State, which he occupied until 1933.

WADIYAR, HIS HIGHNESS SRI KRISHNARAJA, MAHARAJA OF MYSORE (born 1884). Born in Mysore, he traces his origin to a princely house in Kathiawar of Rajput extraction. He succeeded his father when still a youth. He is an all-round sportsman and well versed in Hindu scriptures. He combines with the strictest Hindu orthodoxy a delight in intellectual interests.

Richly endowed as it is with a wealth of mineral resources and having a progressive administration, Mysore has made great progress in industry and agriculture during the reign of the present Maharaja. Much social work has been done to benefit the depressed classes. They have been granted representation in all constitutional bodies of the State.

WILLINGDON, LORD (born 1866). Governor-General of Canada (1926-1930); appointed in December, 1930, as Viceroy of India. Before his elevation to the peerage in 1910, as Baron Willingdon of Ratton, his name was **FREEMAN FREEMAN-THOMAS**. He was born in Sussex, England, educated at Eton and Cambridge, and in 1900 was elected to the House of Commons. He became a Junior Lord of the Treasury in 1905, in the government of Campbell-Bannerman, and retained his seat in the Commons until



EARL OF WILLINGDON
Photo: Fox

1910, when he was made a peer. In 1913 he was appointed Governor of Bombay, and later became Governor of Madras, serving in India until 1924, when he was advanced in the peerage as first Viscount Willingdon of Ratton. In 1925 he was sent on a diplomatic mission to China, in connexion with the Boxer Rebellion indemnities.

YOUNGHUSBAND, SIR FRANCIS. See article, Vol. VIII.

ZEBU. See article, Vol. VIII.

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